

Bob Cooper's

March 15 2006

SatFACTS

MONTHLY



Reporting on "The World" of satellite television in the Pacific and Asia

IN THIS ISSUE

S-BAND
do-it-yourself
"snooper" aerial

Chinese HDTV
has
launched

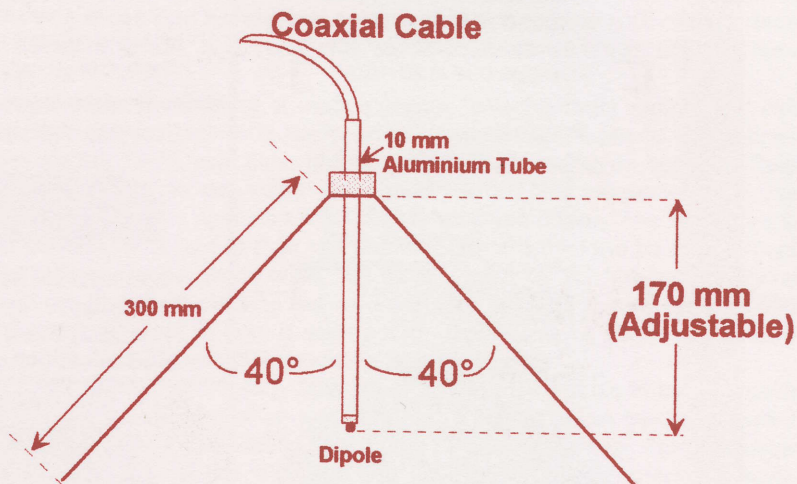
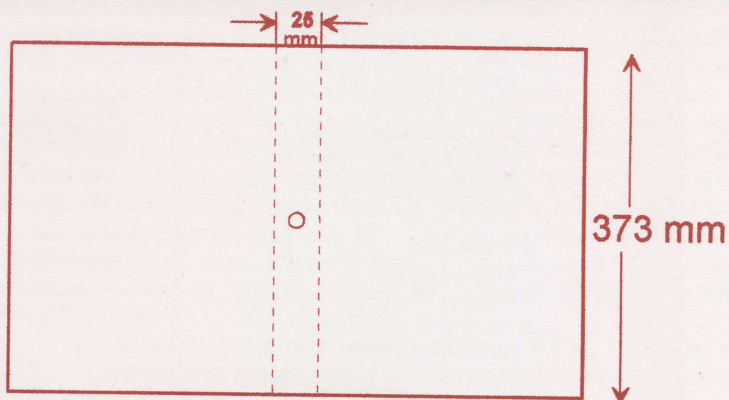
Unfriendly
RCUs:
Kenny and Tim

✓ Latest Programmer
News
✓ Latest Hardware News
✓ End of FTA terrestrial?
✓ Observer Reports

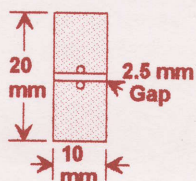
Vol. 12 ♦ No. 139

Price Per Copy:

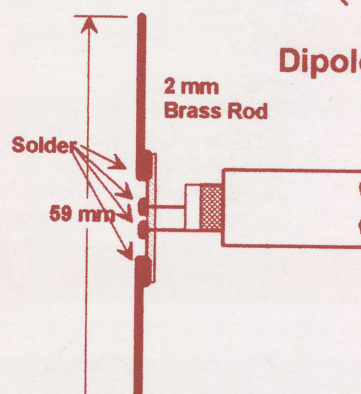
NZ\$10/A\$11/US\$/Euro2



Copper Clad
Circuit Board



Dipole Details



Hualin Pty Ltd

Satellite Equipment Specialists
Import and wholesale

Unit 51/159 Arthur ST Homebush West, Sydney Australia 2140
Phone: (02) 9763 1366 Fax: (02) 9763 1356
Email: sales@hualin.com.au Web: www.hualin.com.au

For all prices, product information and banking details please visit the website or phone us.

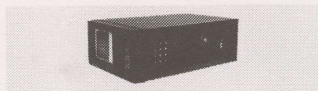
Specials this month

DT800PVR - Digital Receiver



- 40Gb HDD = 40hr Record time
 - 2x CI CAM Slots
 - DiSEqC 1.2
 - **Fibre Optic Output Capability**
- Price: \$390 AUD + GST

Satlook - Signal Meter



- Digital, Analogue and combined versions available
 - A must for the professional
 - Simple menus and functions
- Price: Phone up for Quote

DreamMAX - DT470



- Irdeto embedded
 - 4900 Channel Memory
 - DiSEqC 1.2
 - User Friendly
- Price: \$200 AUD + GST

Everything? Yeah we got

LNB

- Zinwell C Band
- Zinwell KU Band
- MTI C Band, Superhigh gain
- One Cable Solution - CBand
- Dual Output KU 11300 MHz

Positioners

- Superjack EZ-2000
- Superjack DP-6600, DiSEqC 1.0/1.2
- Technosat DP-200, DiSEqC 1.2
- Manual Actuator Driver - EW101
- SAP 2000: 99 Memory positioner

Actuators

- Superjack HARL-3618, 18" Actuator
- Superjack HARL-3624, 24" Actuator
- Superjack DG-120, H/H Mount

Receivers

- SuperNET CA, Irdeto Embedded
- Success, Free-to-Air
- Dion DT-370, Free-to-Air Receiver
- Dion 2x CI, Hardware AllCAMed
- ChangHong, Mediaguard embedded
- SuperNET Terrestrial, DVB-T
- Phoenix High Definition STB

Dish and mounts

- 1.2, 1.8m Solid Prime focus
 - 45, 60, 65, 85cm KU dish Offset
 - 2.13m, 2.27m, 2.4m, 3.0m, 3.07m, 3.7m, Mesh Dish, Light and Heavy
- Duty PSI and JOYSAT Available

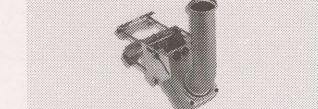
- CBand Wall brackets
- CBand Concrete mounts and stands
- KU Gutter mounts
- KU Wall mounts
- KU Float mounts
- KU Tinroof mount

Dion 818 CI - Digital Satellite Receiver



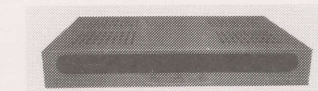
- Slim Size and User Friendly OSD
- 2x CI (Common Interface) slots
- Hardware AllCAMed

SuperJack H-H Actuator, DiSEqC embedded



- All it takes is one coaxial cable....
- NO MOTOR CABLE REQUIRED
- DiSEqC Positioner EMBEDDED!

Supernet - Terrestrial DVB-T



- Digital Terrestrial Receiver
- Slim Design
- High Quality Picture
- Easy to install and use

Dion316 - Digital Satellite Receiver



- FTA + Software Patched
 - 4000 Channel Memory
 - DiSEqC 1.0/1.2 Compatible
- Price: \$170AUD + GST

Switches and Splitters

- 2 and 4 way DiSEqC switches
- 0/22kHz switches
- 2 and 4 way cable splitters
- V/H Multiswitch
- 0/12V Switch

Cable - 15m, 25m, 305m packs

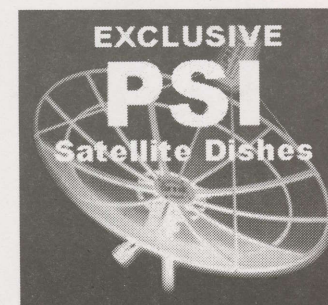
- RG6-U Dual Shield Coaxial Cable
- RG6-U Quad Shield Coaxial Cable
- Cat5 Actuator Cable

Plugs

- F Connectors, Screw or Clamp types
 - Cable joiners
 - AV Splitters
 - Cable Strippers
 - Cable clampers
 - Various other joiners and accessories
- e.g. RCA/SCART cables and converters

Misc

- 2.4GHz AV Sender
- Irdeto 2.06B CAMs, Viaccess CAMs
- Satlook Digital Signal Meter
- Satlook Analogue Signal Meter
- Satlook Digital + Analogue combo
- Satellite finders
- Angle level measure instrument
- High Quality Compasses



SatFACTS MONTHLY

ISSN 1174-0779

is published 12 times each year (on or about the 15th of each month) by Far North Cablevision, Ltd.

This publication is dedicated to the premise that as we enter the 21st century, ancient 20th century notions concerning borders and boundaries no longer define a person's horizon. In the air, all around you, are microwave signals carrying messages of entertainment, information and education. These messages are available to anyone willing to install appropriate receiving equipment and, where applicable, pay a monthly or annual fee to receive the content of these messages in the privacy of their own home. Welcome to the 21st century - a world without borders, a world without boundaries.

Editor/Publisher
Robert B. Cooper (ZL4AAA)
Office Manager
Gay V. Cooper (ZL1GG)

Reaching SatFACTS

Tel: 64-9-406-0651
Fax: 64-9-406-1083
Mail: PO Box 330
Mangonui, Far North
New Zealand
Email: Skyking@clear.net.nz
<http://www.apsattv.com>

Subscription Rates

Within NZ: \$70 p/y
Australia: AV-COMM Pty Ltd,
PO Box 225, Brookvale,
N.S.W. 2100
61-2-9939-4377
Elsewhere: US\$75p/y
All copies sent airmail post.

The fine print

SatFACTS Copyright 2006 by Robert B. Cooper: any form of copying is a violation of our international copyrights. Advertising rate sheet available, upon request.

our Twelfth year!

COOP'S COMMENT

Last month's front cover portrayed a common garden variety home band III television antenna with the suggestion we may be approaching the end of an era. Which era? VHF and UHF terrestrial television, whether analogue or digital in format.

A bit of history for those 50 and under. Once upon a time there was 'classic radio', consisting of name movie stars appearing in 600 seat radio studios where they created 30 and 60 minute programs built around comedy, mystery, western shoot-em-ups, quiz shows, interviews with famous people - just about anything that could be reduced to 'sound' and transmitted through the air to a waiting audience numbering in the tens of millions. Radio shows in the 30s and 40s attracted huge audiences - so large that to compete movie theatres routinely scheduled their film show times around radio features such as 'Amos and Andy', and promised theatre goers they would stop the films for 30 minutes and pump the sound from popular radio shows through the speaker systems. In this way they were able to compete with radio - otherwise people stayed away from the theatres on nights when popular radio shows were being broadcast.

In the United States, at the end of 1948 fewer than 1 million homes had television. But that number rose to 5 million in 1949, raced past 10 million in 1950 and hit 25 million in 1953. Between 1950 and 1954, the radio networks went into a steep nose dive from which they never recovered. In 1950, the U.S. radio networks were creating and sending to local station affiliates on average 14 hours of programming each day. By 1955, that number had dropped to 3 hours and in 1960, all of the previously America-stopper radio shows (such as Amos and Andy) were gone from radio; totally. And it happened with totally unpredicted lightning speed.

Radio programming in the 30s and 40s played to the most common denominator, targeting folks 18-45 because they were the ones building homes, raising families, spending money. Television followed the same pathway to wealth and fame, creating programming that grabbed those with money to spend and a reason to spend it. Virtually everyone in the consumer advertising world follows the same well-trodden pathway to revenue - create something of interest for those 'magic demographics' where money is available to spend. You won't find many mass-media folks deliberately creating material for folks 60-plus although the 13-18 age group has become very important to advertisers.

Programming on radio and TV, articles in newspapers, magazine features largely subscribe to "target the money spenders." Which brings us to those under 18 who have never been without a pocket cell phone, iPod and web-sharing of music. A 16 year old neighbour who helps out around here is saving his money for a replacement cell phone that will cost him over NZ\$800. A 16 year old with an \$800 cell phone? In his class at school, only one student (out of 116) does not own a cell phone device and this is a rural well below-economic-average area of New Zealand. *Think about that.*

News Corp has thought about it, creating a mobile phone "entertainment store" they call Mobizzo(.com). Only 30 days old, the service is designed to transmit 3G images to cell phones and their "content" target are the 13-25 year olds; the same folks "with money to spend." They project it will attract 50 million "hits" per day within six months - a "hit" is a person who will pay between US\$.99 and \$2.99 to order-in a specific bit of video to their cell phone. The logic here is as follows: The 'younger generation' is wed to their cell phone. Statistics over the past four years suggest upwards of 100 million people, world-wide, will have access to 3G "mobizzo" service within a year. News Corp, no slouch at sussing out new markets, expects this to grow to 500 million in two additional years, a billion in five. If each person downloads a single (US\$) 0.99 'clip' per day, well - you do the math. Traditional television is in big trouble.

Terrestrial television, if this works, will rapidly diminish in importance, replaced by new cash cows catering to the 13-25 year group. And when that happens, a repeat of the quick downward spiral of radio networking in the 50s. Television to your home? Possibly via Sky, Foxtel, Austar and Sky Pacific; for awhile, yet. But not the television you have grown accustomed to - thank you Mr Murdoch. And via terrestrial transmitters? Only to your kid's and grandkid's 3G cell phones. Media money follows consumer money every time and FTA is on borrowed time.



In Volume 12 ♦ Number 139

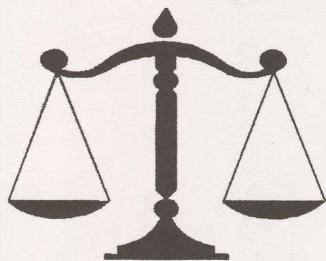
Super fun on S-band: "Snooping" (D.M., Sydney) -p. 7; Chinese have HDTV (Lou Jun) -p. 18; Shaffer and Alderman on unfriendly RCUs -p. 20

Departments

Programmer/Programming -p.2; Hardware/Equipment Update -p. 4; SatFACTS Digital Watch -p. 23; Supplemental Data -p. 26; With The Observers -p. 27

-On the cover-

A construction project. Step-by-step high gain, S-band antenna construction (page 7)



L
E
T
T
E
R
S

PROGRAMMER PROGRAMMING PROMOTION

UPDATE

MARCH 15, 2006

G'day from Alice Springs

"Recently purchased a 2.3m C-band dish, enjoying FTA radio and TV from 7 satellites (beats watching the crap on commercial TV stations, not to mention adverts ... we watch a lot of ABC and SBS). Took me a few months to set it all up, pouring over web sites locating important bits of information; as soon as you (finally) find one satellite, the balance are a piece of cake. I think I am hooked - a second dish seems like a distinct possibility!"

Ken Hanlan, Alice Springs

Ah shucks

"SatFACTS presentation is brilliant - congratulations! I understand your very clear explanations and appreciate the bulk of the information is relevant to NZ. I especially enjoy the comprehensive reviews and comments - example being 'Dreambox 7020' in April 2005 issue. I wish other reviewers could approach their topic with the same common sense, thoroughness and depth of topic knowledge. I look forward to my monthly read."

Tony Dwyer, NZ

ABC AP encryption

"For the past two weekends (this being February 28) ABC AP has encrypted their coverage of the Rugby 14's Tournament. We are taking the service from PAS-8 (4180H) using an Irdeto card bearing a customised ABCAP label. The procedure ABCAP are using for despatch/distribution of cards to PNG is to courier them by Fed-X individually to the (cable) operator and other applicants. So even though we have been the party who notified them of the many operators who require cards in PNG, ABCAP requested each of their respective Email addresses so they can take over the communication and send the cards direct."

Gareth Welsby, Channel 8 Ltd, PNG

The 'leakage' in this hole is a mile wide; anyone who claims to be receiving the service for 'home use' can gain a card as long as they have a 'real' non Australia-NZ address.

Samoa's TV puzzle. SatFACTS visited both Western and American Samoa (SF#122, 123) to report on how satellite and cable have impacted on the two areas. In the intervening 18 months, the answer is, even with Fiji-based Sky Pacific now providing small dish (1.1-1.5m) C-band 16 channel pay-TV, not much change. American Samoa (Pago Pago) continues to be primarily a cable-TV market living on a combination of (San Francisco area) recorded programming (one week delayed, typically) and a scattering of live satellite services. A local low power TV on American channel 11 operated by SatFACTS contributor Bill Hyman completes that particular puzzle. In Western Samoa, we reported government operated SBC was relying primarily on programming outside of the normal copyright pool restrictions. A second operation, operated with programming sourced from TBN-USA, has also appeared in the interim, called 'GBN'. TBN/Trinity often subsidises satellite-fed affiliates, providing cash or equipment for construction of a transmitter system. Enter now an entrepreneur named Tuiasau Uelese Petaia who has been negotiating with Suva's Sky Pacific to bring 'live satellite programming' (including the current rugby rage, 'Super 14' games) to Apia and surrounds. He calls his business LAU TV, and claims to have secured a contract with Fiji and GBN, the latter to use the GBN transmission facility (channel 11, 100 watts). Unfortunately, on January 16th a Samoan Court issued an injunction telling Petaia the TBN/GBN equipment was "solely for the purpose of TBN programming plus local Christian television" - *not* 'Super 14'. Petaia had announced in the local Samoa Observer he would be on the air February 9th (Super 14 starting on the 10th). A SF source reports, "It all comes down to who actually owns the equipment which GBN has been using - including the wooden pole with a channel 11 (transmission) dipole antenna carelessly perched at the top." For now, (Western) Samoa remains outside of the copyright-organised world of TV service.

EWTN targets Australia. On March 3 Catholic Archbishop Pell and the Premier of NSW officially launched the full-time service for EWTN (Eternal Word Television Network) which has been testing on Optus B3 (Globecast: 12.563H, Sr 30.000, 2/3; V=1960, A=1920). Now that full-time service is formally available on Ku, dealers should promote this in their local area. Yes, FTA.

Take this as a message of the future. Australia's second largest print media firm, John Fairfax Holdings, Ltd., is spending NZ\$700 million to acquire New Zealand's TradeMe web site. The firm's print media businesses lost 3% in Australia in the first half of the current fiscal year while their on-line Fairfax Digital News grew by a whopping 66.6% creating a net growth for the firm. The firm now discounts any plan to 'marry a TV network', apparently convinced the web is where the bucks are.

UNAOHM

*a family of measurement
success for 70 years*



Laceys.tvTM

42 Brunel Rd. Seaford VIC 3198

Tel: (03) 9776 9222 Fax: 9776 9766

e-mail: info@laceys.tv www.laceys.tv

Branches in Sydney, Ulverstone and Woolgoolga

New Zealand: Hills Industries (09) 274 6509

From the top line EP 3000 EVO to the economical handheld S22, C30 and T40, Unaohm's claim to fame is sound measurement principles. Now supported in the Pacific by Laceys.tv's Factory Trained Repair and Cal centre, there are good reasons to make your next meter an Unaohm!

TelePhoSee?

"I am against using internet to relay copyrighted television programming (reference SF#138) but am intrigued with how you could take the TelePhoSee device and from a remote location actually tell a TV set, satellite or cable STB, to change the channels without tearing into the basic unit. I have seen an outboard device that could do this, merely being plugged into the TelePhoSee's A/V inputs. What thoughts do others have?"

Arnold, Sydney

Actually, RS232 is available and one of the functions TelePhoSee can do is (with a suitable Sony CCTV camera) adjust the camera's field of view, depth of focus and other remote control features. So the control functions are already inside of TelePhoSee - what is missing is software to take their functions, already in place, to cause them to change STB channels rather than adjust a remote TV camera.

Any creators out there?

LBF non-responsive?

"Dealing with French (+ English) service LBF (1701) is a bit like winning lottery. They don't answer their phone or emails to the Melbourne office and after many tries I finally got someone to answer their Sydney area phone. It is difficult to grow a business when you don't talk with clients!"

Brian Watson, Western Video

SP is not slow play!

"SF#138 slipped in comment, p. 12, that VHS SP is slow play mode. Actually, there are VHS SP, LP, EP and SLP of which SP is 'standard play' and the balance are slower tape speeds."

IF, Queensland

Tape 'speed' determines two results: How long the tape will record before running out, and, the quality of the VHS image.

Thankfully, give us 5 years and all of these formats will be footnotes only found in history books.

Wear it once - throw it away

"I know all about Chinese imports having once worked in the 'rag trade'. Local manufacturers did good quality work producing wearables people could use and re-use for a decade or more. But consumers have changed - wear it once (or twice) and throw it away or donate to an Op Shop. Unfortunately, even satellite TV hardware has dropped to that level or merchandising. But if the last man left standing is Chinese - well?"

M. George, Melbourne

HARDWARE EQUIPMENT PARTS

UPDATE

MARCH 15, 2006

(Another) Major web address error. Our SF#138 feature report on the GTSA and TelePhoSee system involving iPSTAR contained one of those "only in internet-land" typographic errors that plagues anyone who attempts to work their way through the world wide web (www). We reported you should/could contact Australian firm Global Touch Solutions at www.myfreetalk.com whereas the actual web address is www.my-freetalk.com. Damn those hyphens! The address, minus the hyphen, sends you to a Mandarin-only web site which sells - well, we are not certain what they sell. Repeating the correct address for GTSA - www.my-freetalk.com. Try it, now.

And now Hong Kong. The spread of broadband wireless continues without letup, in the 3.4-3.6 GHz spectrum. The Hong Kong Radio Spectrum Advisory Committee is recommending to government opening this spectrum to "wireless broadband", essentially the same system that is raising C-band reception havoc on Fiji, around Sydney, and now as well, New Zealand. The same HK board has also now approved, for the first time, 27 MHz CB (Citizens Band Radio) which of course has been a major source for television interference world-wide since first introduced in the USA back in 1960. Of interest - APT (the satellite operations company) with their down and uplink site in Hong Kong has been recommended for an "exclusion zone" around their facility. Unless that zone is multi-miles wide and long, the effort will probably not be helpful.

Tasmanian DVB-T problems. "The digital transmitters on Mt Barrow apparently are running on an inadequate primary (mains) voltage line. The levels bounce up and down, as verified on a spectrum analyser with WIN-TV the worst of all." Nobody said the transition from analogue to digital was going to be glitch-free.

Big time signals from new AMC23 now testing at 172E suggesting sub-2m dishes will function over a large area of the Pacific on C-band. Most signals are carriers-only or modulated but devoid of actual content material. It will be interesting to see how PAS-2 at 169 and AMC23 play with 3 degrees between the two birds. Alas, until there are regular users here, it is academic for now. The 'marketing program' for AMC23 remains equally unknown, but with the apparent resources of being new and powerful, the sky is the limit. Watch this one!

A positive sign. Yeah, it has been years (nine, in fact) since someone in New Zealand made a serious effort to stock satellite antennas and reception hardware. Enter Chris Clarke (Napier) who has been working on this challenge for more than a year. His "Advanced Aerials" has landed the prestigious *Patriot Antenna* (and accessory) product line for New Zealand, Australia, and the Pacific as an advertisement appearing here on page 13 first announces. Patriot itself is on a roll having just landed a 100,000 unit order for 84cm dishes with iPSTAR.

Phoenix Technology Group

Satellite Equipment & Accessories One Stop Supermarket



**Phoenix 2.35m Motorized
Extra Heavy Duty Mesh \$180 each
Buy 10 get one Free!**



**Folding Arm Dish
best dish for caravan &
camping**
64cm \$25/each
78cm \$48/each
88cm \$55/each
North Elev Bracket \$5 each

Irdeto 2.06B CAM	\$110	PBI C+Ku band LNB	\$65
Viaccess CAM	\$110	Zinwell C band LNB	\$35
65cm Azure shine offset dish	\$28	Zinwell Ku band LNB	\$25
75cm Azure shine offset dish	\$40	MTI C band LNB	\$25
85cm Azure shine offset dish	\$45	MTI one cable solution LNB	\$45
One leg gutter mount	\$18	Satellite finder	\$25
Two leg gutter mount	\$22	RG6 stripper	\$20
Tin roof mount	\$22	RG6/RG11 crimper	\$30
Wall mount	\$15	Angle meter	\$35
Superjack H-H motor	\$95	Compass High Quality	\$10
2.3m SD mesh dish	\$150	RG 6 Crimp Connector 100 pack	\$25
3m SD mesh dish	\$340	22K switch	\$10
3m HD mesh dish	\$380	Two way DiSEqC switch	\$10
3" 2.5m galvanised pole	\$30	Four way DiSEqC switch	\$12
3" 3m galvanised pole	\$35	Satellite 2 way splitter	\$1.50
3" 3.5m galvanised pole	\$40	Satellite 3 way splitter	\$2
3" Triangle Pole for C band dish	\$50	Satellite 4 way splitter	\$2.50
Speaker Stand for caravan use Ku dish	\$45	4 way multi-switch	\$35



Made U.S.A

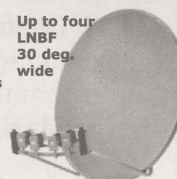
**Paralipses 1.2m
prime focus panel
dish**
\$160/each
AZ/EL mount \$32/each



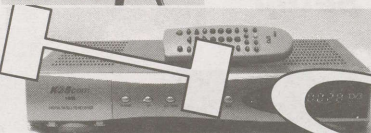
Easy transport
Last stocks of
mesh dishes
from USA

**Paralipses 2.6m
mesh dish**
\$1500/
(300/each x5)

**Multi-beam 1m
offset dish**
Ku band satellite from
Optus B3 + Optus C1 + Pas
8 + Pas 2
Just one dish to receive all
\$150/each

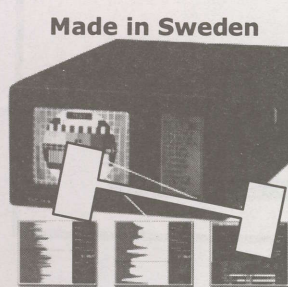


SATLOOK



**Koscom 1600A
Irdeto Embedded Satellite Receiver**
\$200 with free Optus Aurora card
**Buy 10 or more and get 10% dis-
count & one box of 305m RG6 cable**
for free

SATLOOK Digital NIT
\$1395
Satellite-receiver 920-2150 MHz.
• Spectrum-analyzer with expanded spec-
trum.
• Digital BER, QPSK and S/N-ratio.
• 4.5" B/W monitor for PAL/NTSC/SECAM.
• Tuneable sound 5.5 - 8.5 kHz.
• LNB voltage 13/18v. 22 kHz tone switch.
• DiSEqC control (1.0, 1.1, 1.2).
• KU- and C-band (inverted video).
• 99 memory-positions for spectrum pic-
tures.
• Satellite identification.
• Symbol rate 1-30 Msymb/s.
• RS 232 for PC connection.
• Built in, rechargeable battery.
• Only 5 kg complete with carrying-case.
• Transponder content analysis.



Made in Sweden

COMBO \$2295
The combination of SATLOOK Digital NIT and TVLOOK
• Input frequency: 2-900 MHz and 920-2150 MHz
• 4.5" B/W Monitor for PAL/NTSC/SECAM
• Lots of memory positions for spectrum pictures
• RS232 for PC-connection
• Built in, rechargeable battery. Only 7kg complete with
carrying case
TV-PART:
• 2-900 MHz spectrum analyzer
• Presents full range spectrum (and expanded)
• Very high accuracy, $\pm 1\text{dB}$ (at 20°C)
SAT-part:
• 920-2150MHz spectrum analyzer. Digital BER, QPSK and
S/N-ratio
• Satellite-ID and TV/Radio-channel info (NIT)
• Tuneable audio bandwidth 5.5-8.5 kHz
• LNB voltage 13/18v. 22kHz tone switch



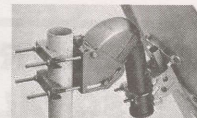
Phoenix 2800A \$110
The Best FTA Available
Quantity price available



Dreamax DT470 \$160/
each Irdeto Embebbled
Satellite Receiver



**Zinwell 15K
LNB \$28/each**
for box of 24



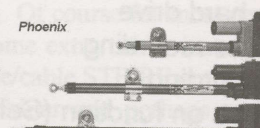
Moteck SG2100
Motor \$105/each



SuperJack EZ2000
Positioner \$50/each



Moteck V Box II
DiSEqC1.2 Positioner
\$65/each



Phoenix
Actuator from 12' standard
duty to 36' heavy duty
From \$35/each to \$220/each

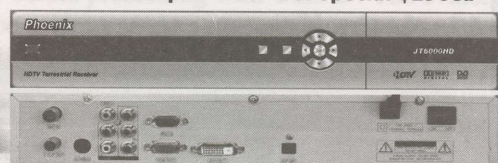


RG6 Cable
Dual shield
\$65/box
Quad shield
\$75/box

Phoenix JT3300A
Digital Terrestrial Receiver
\$110-1 buy \$99-5 buy



Phoenix JT6000A High Def Receiver
with DVI output December special \$290ea

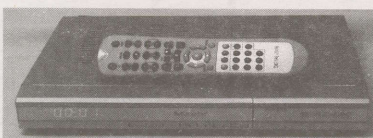


This Month Special

**Optus B3/Pas 8 Free To Air
channel Package**
5x Phoenix 2800A digital satellite receiver
5x 64cm foldable arm dish
5x 11.3GHz/10.7GHz/universal
Ku band LNB your choice
5x Gutter mount/wall mount
One Box RG-6 Cable

\$975 (\$195/each x5)

**Magix 9600 \$145 ea our
clear out price don't miss out with
embedded cam and 2x cam slots**



**Optus B3/Pas 8/Optus C1 Irdeto embedded
channel Package**
Koscom 1600A Irdeto cam embedded digital satellite
receiver x 5
64cm foldable arm dish x 5
Zinwell 11.3GHz/10.7GHz/universal Ku band LNB x 5
Gutter mount/wall mount x 5
One Box RG-6 Cable
That's only \$255 each

\$1275 5 Unit Package Price

C band free to air channel Package
5x Phoenix 2800A digital satellite receiver
5x 2.3m SD mesh dish
5x Zinwell C band LNB
5x 3" 3m galvanised pole
One Box RG-6 Cable
That's only \$395 ea crazy!

\$1975

GREAT FREIGHT
DEALS TO N.Z.
CALL OR E-MAIL
FOR A QUOTE

Dealer Inquires Most Welcome

Come To Us For Bulk Buying Deals

21/148 Chesterville Rd. Moorabbin VIC 3189
Website: www.phoenixtelevision.com.au

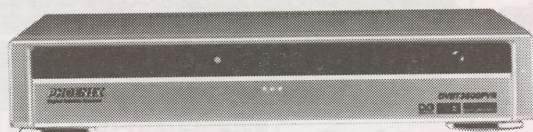
Phone: (03) 9553 3399 Fax: (03) 9553 3393
E-mail: sales@phoenixsatellite.com.au

LATEST RELEASE TECHNOLOGY

TERRESTRIAL P.V.R. PERSONAL VIDEO RECORDER

80 gigabyte hard drive
Up to 28 hours recording
Time shift recording
Record always on function (Selectable)
3 step (x4x8x16) Forward/Rewind
Timer Record (Once/Daily/Weekly/Monthly)
Dual Scart, RCA, SVHS, Optical out, S/PDIF

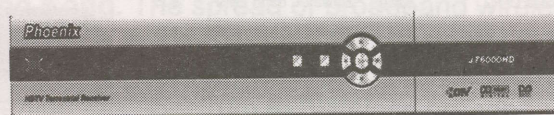
Made in Korea



TERRESTRIAL H.D.T.V. HIGH DEFINITION RECIEVER

DVI, VGA, Component outputs
Supporting 1080i/720p/576p
CVBS/S-Video outputs
Switchable outputs via remote control
Dolby 5.1/AC3
Optical output S/PDIF
User friendly interface

Easy to use

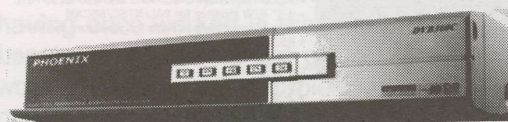


CALL NOW FOR LATEST PRICING

COMBINATION DVB-T & DVB-S SATELLITE AND TERRESTRIAL

Fully DVB-T, DVB-S, MPEG2 compliant
Universal CA card slot
Diseqc 1 & 1.2 compatible
S/PDIF Digital audio, Dolby AC-3 output
Multi language support
Single channel listing (DVB-T & DVB-S)
Also available in Free to Air model

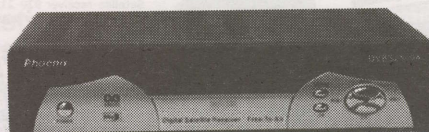
Made in Korea



IRDETO DVB-S SATELLITE RECIEVER

Fully DVB-S, MPEG2 compliant
Licensed Irdeto CA card slot
Diseqc 1 & 1.2 compatible
S/PDIF Digital audio
SVHS output
Sensitive Tuner
Also available in Free to Air model

Easy to Setup



PHOENIX TECHNOLOGY GROUP

Unit 21
148 Chesterville Road
Moorabbin
Victoria 3189

Telephone (03) 9553 3399
Facsimile (03) 9553 3393
email: sales@phoenixsatellite.com.au
Web: www.phoenixsatellite.com.au

Corner Reflector taps you into your neighbourhood 'wireless' TV

With the almost complete demise of analogue satellite television transmissions, one might ask, "Whatever will I do with the assortment of analogue receivers; throw them away?" In my case, there are four of these and there had to be a use for them beyond reminiscing about the past by tuning in that tiny handful of remaining analogue services.

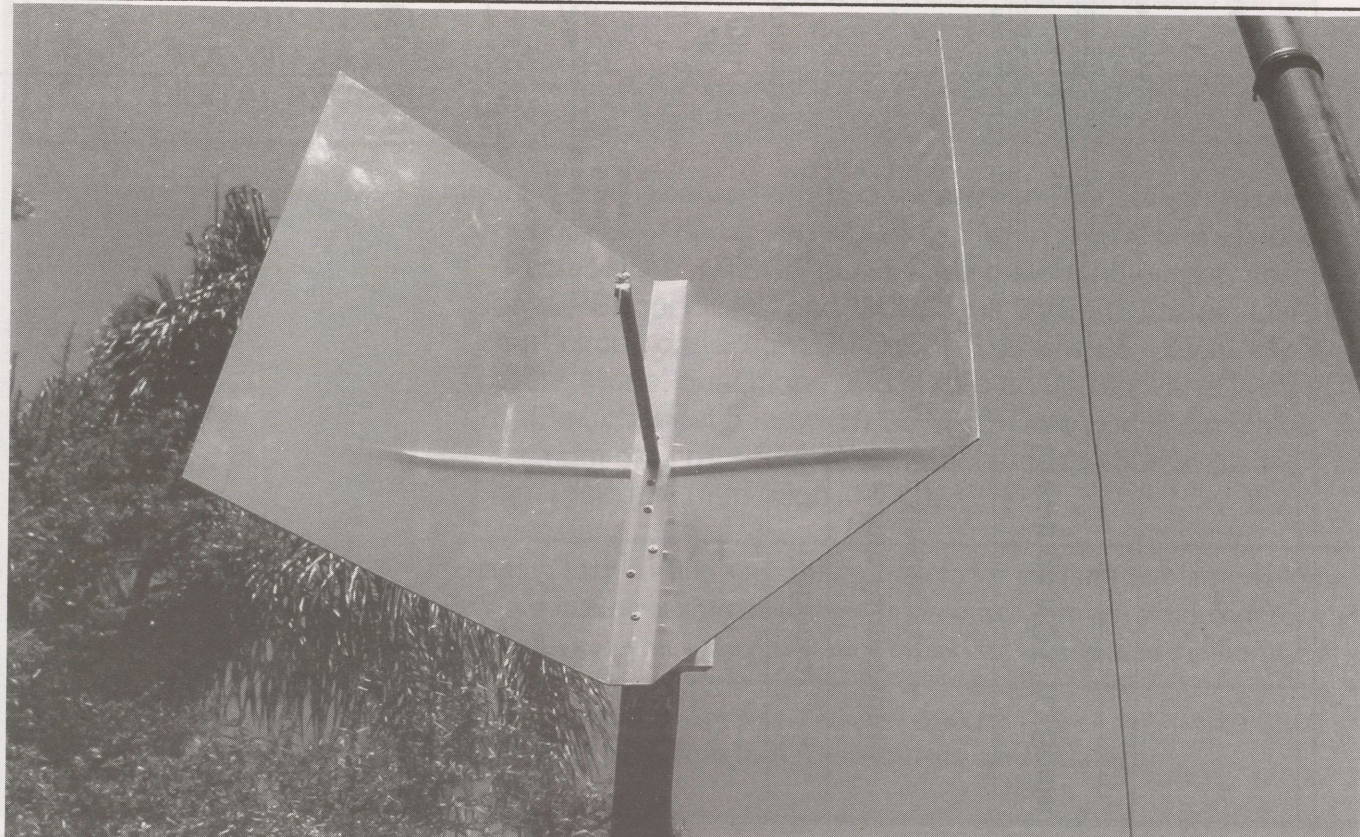
And so a thought struck me; the 2.4 GHz band. This is outside of (higher in frequency) the standard analogue IRD tuning range of 950 to 2050 MHz. Perhaps a 'small modification' to the analogue receiver's tuner would allow me to extend the 2050 to perhaps 2500? Alas, even analogue-era tuners turn out to be firmly committed to their singular designed-for task and if I was half smart, avoiding such butchery seemed like the prudent plan. At these higher 'UHF' ranges the design has been optimised for one purpose and even small changes in parts or tuning voltages proved fruitless.

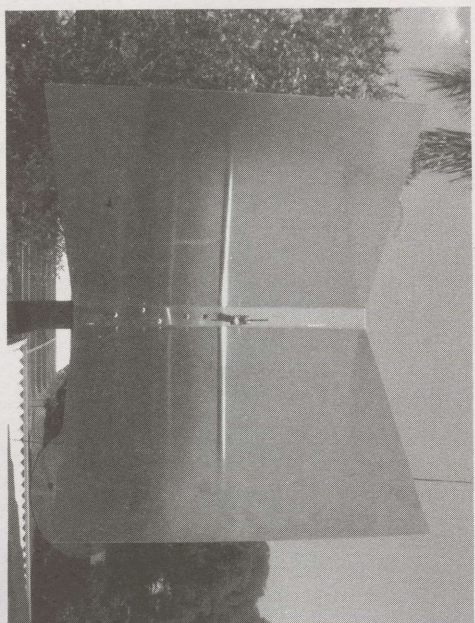
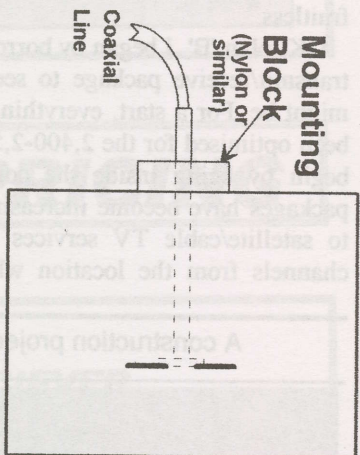
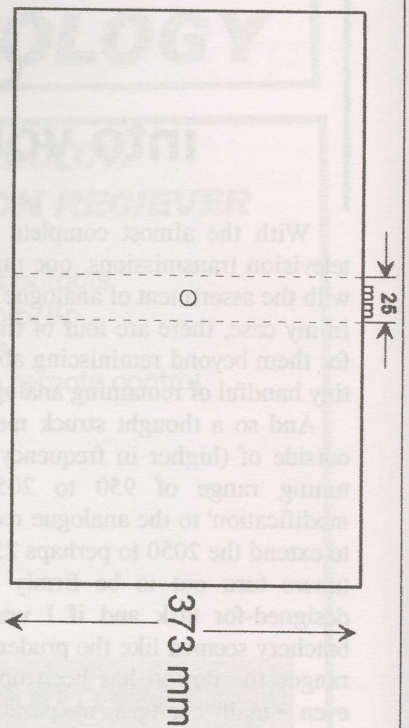
OK, plan 'B'. I began by borrowing a 2.4 GHz video sender transmit/receive package to see what their own limitations might be. For a start, everything about 'sender packages' has been optimised for the 2,400-2,500 MHz region. At least you begin by being inside the correct venue. These sub-\$100 packages have become increasingly popular with subscribers to satellite/cable TV services allowing them to route TV channels from the location where the commercial STB is

positioned to additional locations (room to room) without going to the additional expense of an additional STB and more in-house wiring. Of course for most people reading this magazine, running some extra cable, installing a splitter and combining the satellite/cable STB RF output (using an add-on amplifier, signal combiner and perhaps an attenuator) with existing aerial distribution cabling would be no challenge. But the average consumer wandering around a DSE outlet soliciting 'advice' from the always helpful staff has a different starting point; 'no wires'? "That's for me!" With hands-on a sender system, I wanted to know as much as possible about the technology before proceeding with 'Plan B'. The evidence turned out to be correct; senders routinely use FM (frequency modulation) for the video (1) and FM sub-carriers for the audio/sound which by good fortune happens to be very similar to the former analogue satellite signals my old fashioned receivers were designed to receive.

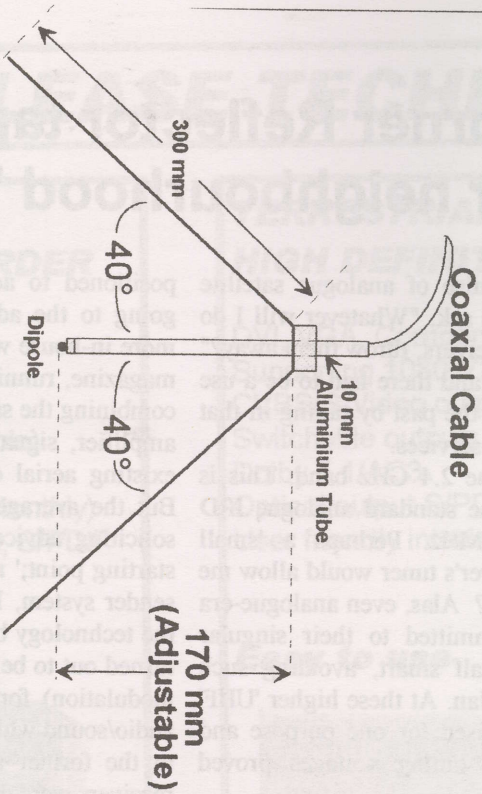
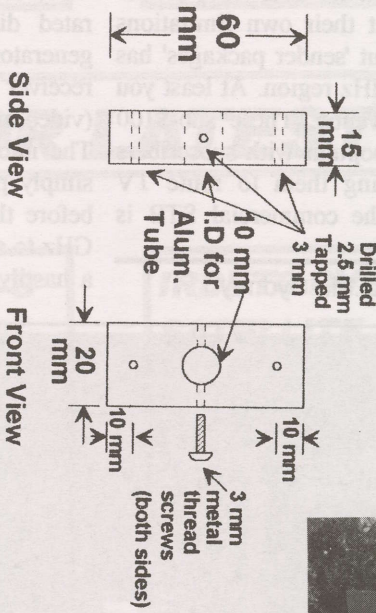
By constructing a simple diode mixer (using a microwave rated diode) and a separate (also borrowed) RF signal generator as a local oscillator, I was able to tune the satellite receiver to the 2.4 GHz band and successfully receive signals (video and sound) originating in the sender unit at 2.4 GHz. The microwave diode driven by a signal generator (as LO) simply placed one additional stage of frequency conversion before the existing analogue receiver - downconverting 2.4 GHz to someplace in the 950-2050 MHz tuning range. Using a hastily constructed dipole antenna calculated for reception

A construction project by D.M., Sydney

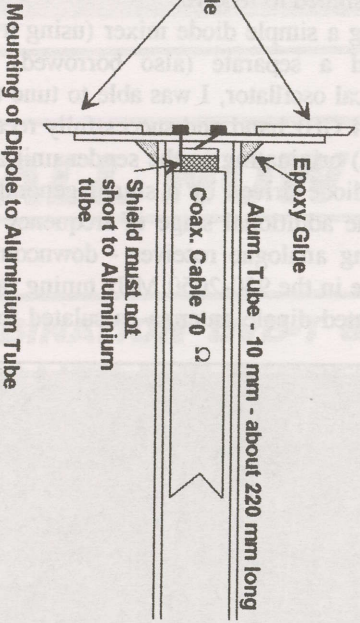
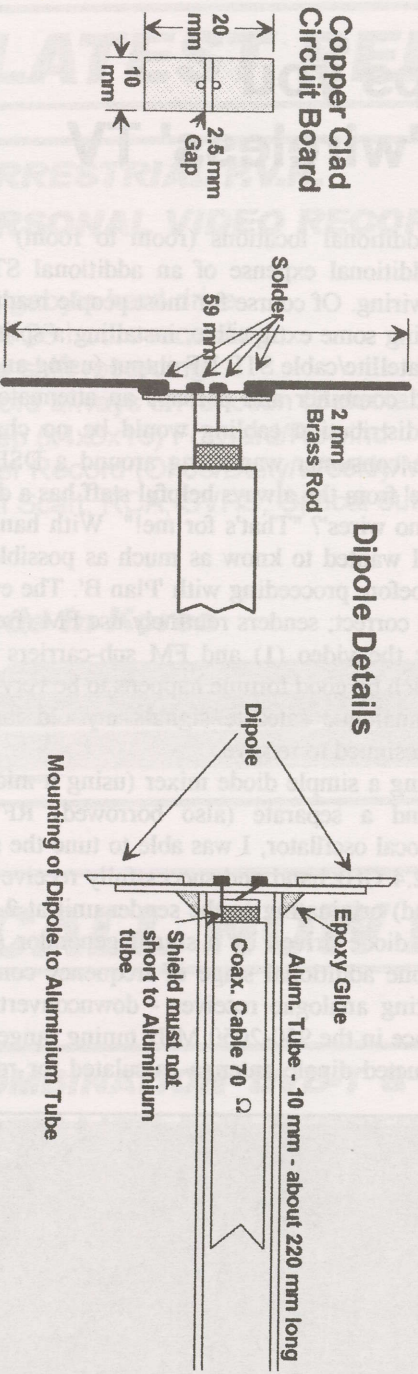




Mounting Block Details



Dipole Details



Reflector

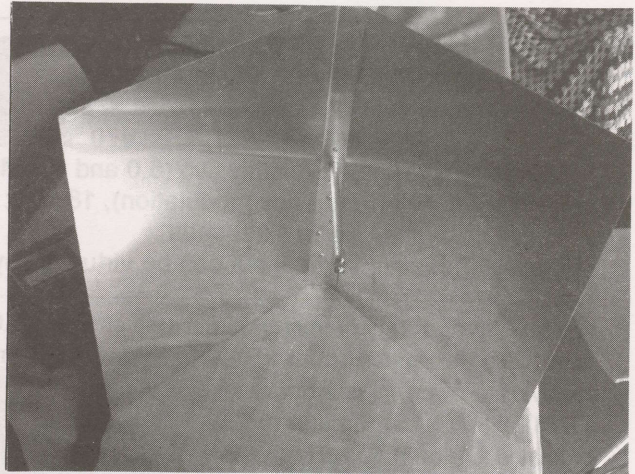
1.2 mm Aluminium
or similar

Drawings NOT TO Scale

at 2.414 GHz (channel 1 on the sender unit, of four user selectable channels), I found my extra-conversion stage system was at least the equal of the standard "sender" receiver package; progress. This also allowed me to work out that at least the sender transmitter I was testing actually creates a pair of audio subcarriers; one at 6.0 MHz and a second at 6.5 MHz.

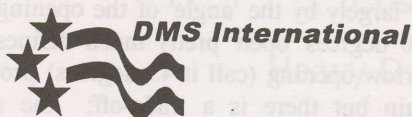
Flushed with this initial success, the next challenge was to increase the sensitivity of the add-on diode mixer package and creating a replacement local oscillator for the borrowed signal generator. There was a smaller interim step - working out whether after going to some effort there was in fact anyone in 'my neighbourhood' using the 2.4 GHz band for video senders. Sitting on my home workbench, the only signal I could locate originated at the sender I had borrowed for testing. If this lashup could not locate more distant (DX) signals from my workbench, I would have to 'go mobile'. I strapped the A/V commercial receiver to the bonnet of my motorcar, waited for night to fall, and began a slow tour of my immediate area relying totally on the audio reception from the FM subcarriers since at that point no access to a 12 volt portable TV receiver was available. 'Nightfall?' Driving around your own neighbourhood with an electronics box taped to your bonnet is probably not something you want to share with your neighbours; "Your honour, we found him sitting in the street in front of our house *listening to our movies!*". (2)

Most video senders operate with between 10 and 100 milliwatts of transmission power and while SatFACTS has demonstrated that some pretty amazing coverage is possible



with such 'microwave' levels, I was optimistically forecasting that a radius of 500 metres of my own home would pretty well define what I could expect with a finely peaked receiving system. For the record, virtually all of the take-it-home consumer sender systems use vertical polarisation (a small whip or 'stubby' antenna). It was at this point where lightning struck, in the form of my monthly SatFACTS. There it was, a purpose-designed S-band LNB specced at 50 dB of gain, 0.4 dB noise figure, covering the full 2.4 - 2.5 GHz region. I could not get the order off fast enough! And the unit as in my hands in seven days from New Zealand - good service.

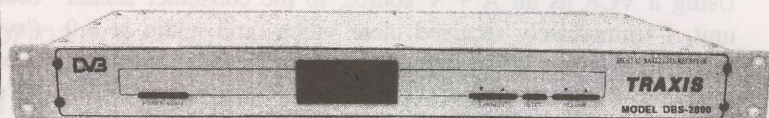
On inspection, this (Chinese manufactured) device is well made, features a type N (2.4GHz end) input type 'N' female connector (into which you plug a suitable 2.4 GHz antenna



PROFESSIONAL RACK MOUNT FTA MPEG-2 + 1 DIGITAL RECEIVER

**Private labelling available
on this and most other products!**

Traxis DBS-2800 19" Rack Mount Digital Receiver - Great commercial receiver at a great price.



TRAXIS DBS-2800 19" rack mount digital receiver - ends cumbersome "consumer receiver" lash-ups in SMATV, CATV headends! Everything you would ask for in a FTA professional receiver: MPEG2 and MPEG-1 compatible, NTSC/PAL/SECAM baseband output, user settable 4:3 and 16:9 image ratios, QPSK for SCPC and MCPC, full DVB FEC rates. LNB(f) 13/18VDC (500 mA max) with short-circuit protection; DiSEqC 1.0. Mains 85 - 260VAC, 50 to 60 hertz, 21 watts maximum draw. Mono, dual mono and stereo audio recovery. L-band input 950-2150 MHz, -65 to -25 dBm, channel bandwidth 36 MHz. Data port 9 pin D-sub type using RS232 protocol, maximum data rate 57.6 Kbps. Mechanical: 480mm (wide), 245mm (deep), 41mm (high; 1 RU).

DMS International specialises in creating hard-to-find speciality products for medium and large volume users. We create a design to satisfy our customer's needs using world-source, proven manufacturers, arrange for manufacture of the product, and you - the distributor or service operator are in business!

<http://dmsiusa.com> & <http://dmswireless.com> ♦ Tel ++1-770-529-6800 ♦ Fax ++1-770-529-6840
WORLD SOURCE for DTH Broadcasters, Distributors and Dealers

The parameters for S-band unlicensed equipment

Band definition: 2,400 to 2,483.5 MHz

Video channels: (1) 2,414 or 2,410; (2) 2,430 or 2,432; (3) 2,450 or 2,451, (4) 2,470

Audio subcarriers: Typically two (6.0 and 6.5 MHz)

Modulation: FM (frequency modulation), 18 MHz width with sidebands

Polarity: Typically vertical but can be virtually anything

S-LNB Status

SatFACTS created a 50 dB gain. 0.4 dB noise figure antenna mounting LNB with a 3.65 LO that outputs in L-band (2,414 = 1,236 = C-band 3,914). Demand has at presstime exceeded supply and delivery is back logged several weeks. See ordering instructions page 25, SF#135 or page 22 SF#136. Orders are being shipped in sequence received.

system), type F (also female) output (which using RG6 you connect to the input on your 950-2050 MHz L-band analogue receiver). Powering is from the analogue receiver's normal 13/18V DC source through the RG6. My unit had a factory indicated LO of 3650 MHz (3.65 GHz) and the signals I was hoping to receive would (I assumed) be on 2.414 GHz (video sender channel 1 - most users will only attempt to change the default channelling if they happen to run into interference). Therefore the output frequency would be 3650 - 2414 or 1236 (MHz). However, my analogue L-band receiver is in fact calibrated with the C-band input frequency, not the L-band IF. So what frequency should I set the receiver to hoping to locate the 2.414 video sender? Humm.

A C-band receiver wants to see a local oscillator of 5.15GHz (5,150 MHz) and all calculations for C-band reception begin from that point. Some quick math follows. By subtracting the video sender's frequency (2,414) from the S-band LNB LO (3,650) we know the actual L-band frequency following LNB conversion is 1,236 MHz. So we have the "end number" (1,236), and now to find the actual analogue receiver's "indicated" frequency we take the 1,236 and subtract it from the standard C-band LO; 5150 - 1236 equals 3,914. And that is where you tune the analogue C-band indicating receiver to.

Testing

Now that I had super-sensitive front end on my 2.4 GHz receiving system, naturally I was anxious to give it a test run. Using a VCR as an A + V source, to the consumer sender unit, I immediately received clear video (and audio at 6.0 subcarrier). Progress but then the distance was very short! At this point I had not connected any type of antenna - not even a clip lead - to the S-band LNB's type N connector. Obviously if 'DXing the neighbourhood' was to be a reality, a 2.4 GHz antenna was required. By connecting a 30mm piece of wire into the centre-pin of the type N connector (approximately a quarter wavelength of 'antenna'), the package produced flawless video anywhere on my property. Wow; this thing is

sooo sensitive! The time had come to give serious thought to a 'real' antenna.

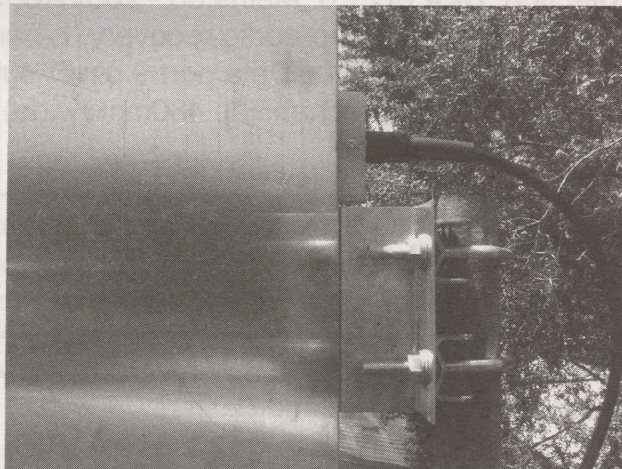
Normally with an LNB, you are forced to use some sort of 'feed' that mates with the LNB's open flange (or factory-closed flange in the case of LNBf). However, by making the input a type N connector, you have an added degree of flexibility - any antenna you can create which can be connected through a type N (male) fitting can work here.

What would be a suitable 'snooper antenna'? High gain would be nice, good directivity perhaps a requirement in a built-up area where they will be multiple sender sources, and equally important, good front to back ratio. This thinking led me to the corner reflector. The size for a corner reflector is a function of how much gain you believe you require and of course the operating frequency. A corner reflector is also easily fabricated with materials you are likely to have available in your community, and it is reasonably forgiving of small to medium construction errors.

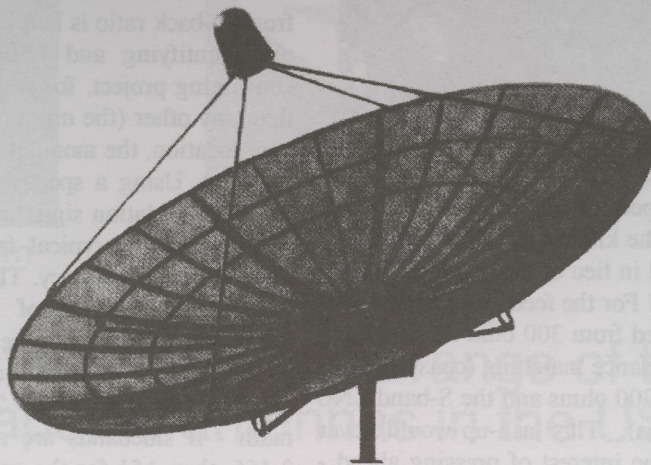
The corner reflector resembles a book laid on its lower edge and opened so that the spine of the book is vertical (you've guessed that from the artwork and photos at this point!). A corner reflector's gain, pattern and 'impedance match' are determined largely by the 'angle' of the opening; 45 degrees 'open' to 90 degrees 'open' pretty much defines the options here. A narrow opening (call it 45 degrees) provides greater antenna gain but there is a trade-off; the actual signal receiving portion (a dipole) with a 45 degree open angle becomes a 20 ohm antenna. But your system is 50 to 70 ohms ('system': the input antenna line impedance connected to the S-band LNB type N fitting). So if you narrow the opening to 45 degrees, the gain goes up while at the same time your feed dipole match-gain goes down - unless you are clever enough to create a 20 ohm dipole!

This might be an appropriate point to refer to the drawings describing antenna construction (page 8). The dimensions show are for a solid reflector surface measuring 3 wavelengths at 2.4 GHz tall and the depth of each wing or plate is 2 wavelengths. My design settles on an opening width of 80 degrees (slightly smaller than 90 degrees which represents the two sides joined together at right angles). Notice that the reflector is mounted vertically, and the signal pickup antenna - a dipole to be described - is vertical as well, running parallel to the 'crease' at the back of the antenna's surface. Vertical? Remember virtually all video senders employ a short vertical whip (or flat plate) antenna and this in turn determines the 'polarity' of the through-the-air radiated 2.4 GHz transmissions.

But a suitable corner reflector would have to wait - like a child with a new toy, rounding up the parts and taking the care required to fabricate a permanent antenna was not on my agenda. I wanted to see how far I could stretch this baby - now!



JOYSAT



SIX Reasons to Choose a JOYSAT Mesh Dish !

Cost Effective, Economical

Heavy Duty Frame with Strong Mesh

Suitable for Windstorm areas

High Performance, High Gain

Both C and Ku Band: 2-13GHz

Choice of Colours: Black, Cream and Dark Green

High moisture area??? Hot dip galvanised now available!

And SEVEN More Reasons !

2.3m 3.07m 3.7m 4.5m 4.9m 6.1m 7.2m 9.0m

*** New Design ! JPL-230, 2.3m Mesh Dish**

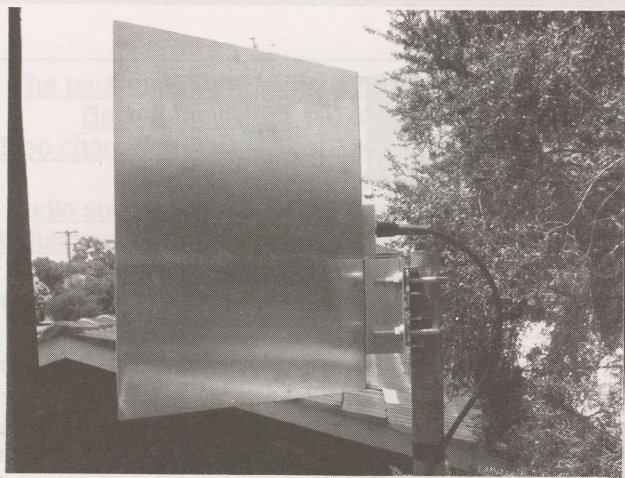
Medium Duty, Most Economical yet !

2 / 1, Stockwell Place, Archerfield, Brisbane Qld. Australia

Telephone: (61) 7 3255 5211 Fax (61) 7 3255 5126

<http://www.joysat.com> email: info@joysat.com

joysat@bigpond.net.au



I grabbed some plywood, ripped it with a skill saw, grabbed a roll of aluminium foil from the kitchen and quickly made a mock-up antenna using the foil in lieu of a real solid reflector surface. I was anxious to test it! For the feed antenna, a folded dipole (easily quickly configured from 300 ohm flat line) and a hurriedly created 4:1 to impedance matching (coaxial cable) balun (the folded dipole being 300 ohms and the S-band LNB being somewhere near 70 ohms). This lash-up would never do for permanent use but in the interest of pressing ahead - *quickly* - any losses would be forgiven by my enthusiasm to 'see pictures'. I would not be denied, nor disappointed.

Connecting to the analogue satellite receiver, the temporary plywood and foil antenna was positioned to point at the nearest to me video sender - perhaps 400 metres although there would be obstructions to LOS (line of sight) including of course the neighbour's own house walls. Instant reward: Slightly sparklie picture, noise-free sound. *Wow!!!*

There was a problem - one that may not be as quick to resolve as the results to this point; interference. Remember that S-band, defined as 2,400 to 2,483.5 MHz, is an almost universal 'license free' band of frequencies. The number of consumer products using some (or all) of this spectrum is almost beyond comprehension ranging from microwave ovens that cook or heat your food to wireless baby monitors, ISM (Industrial, Scientific and Medical) apparatus, and of course 'Blue Tooth' wireless connections. Some of these devices stick to a single frequency (such as 2,414 video sender channel 1) while others create very broad signals (such as 2,400 - 2,440 MHz) and still others using a 'sweeping' system known as 'spread spectrum' to 'dither' their transmitted energy from 2,400 to 2,483.5 as often as 50 times each second. And there are dozens of 'modulation' variants - the method of attaching 'information' to the transmission. Different forms of modulation will have varying ill-effects on a frequency modulated video signal and the relationship between interfering signals and video reception will vary accordingly.

So the S-band LNB's 50 dB of gain, 0.4 dB noise figure coupled to my plywood and foil test antenna was functioning. Next a comparison test - mount the consumer edition receiver on a wooden pole, set it right next to the corner reflector + LNB and - nothing. Not even a *hint* of reception. In fact, the 'deaf and dumb' video receivers provided for consumer sender use are their own form of 'filter'; by being insensitive, they tend to ignore the plurality of other signals in the area. But when you replace one of these (they typically require 500 microvolts per metre of signal to function) with the S-LNB device requiring under 10 microvolts per metre, you are now

significantly below the threshold of consumer receivers. And that of course is where the interference resides.

In my case, while there are many apparent co-users of S-band near me, the most prolific originates around 1.5km away and when I point my corner reflector antenna towards where my neighbour's have sender units, most of them are on antenna headings that places this multi-use tower site behind the corner reflector (which is where the antenna's high front-to-back ratio is helpful).

Identifying and resolving the interference is a time consuming project, for which every location will be different than any other (the mixture of other band users, proximity to your location, the modulation formats each uses all being very random). Using a spectrum analyser, I found a very strong digital modulation signal near 2,465 MHz; approximately 50 MHz above the typical factory-set video channel 1 (2,414 MHz) sender frequency. This should not have been a problem with 50 megahertz of separation, but the modulation sidebands could still be seen at 2,414 indicating this particular transmitter source very possibly is not fully contained in the 2,400 - 2,483.5 band limits either (simple math - if sidebands are at 2,414 which is -51 MHz from 2,465, then +51 for the opposite 'sideband' would be 2,516 - certainly well above the nominal 2,483.5 limit). That is one of the challenges with unlicensed plug and play equipment - while each such product sold is supposed to conform to specified RF limits, the temptation to designers or installers is to do something with *their* box to negate the interference problems. Higher power than authorised is one such 'temptation' while pushing the specified band limits (identified as 2,400 on the low end and 2,483.5 on the upper end) is another. If one manufacturer shifts his operating frequency to 2,390 or 2,490, to escape what can be paralysing interference, who is to know? And if, as a result, his box suddenly outsells competitive units (falsely claiming 'greater immunity to interference'), well, it is all about the 'bottom (financial) line' is it not?

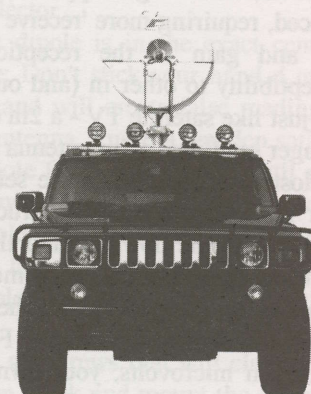
The typical video sender restricts its frequency modulation (bandwidth) to around 18 MHz which means that if the channel 1 centre frequency is 2,414, the video modulation information actually runs out with sidebands to around 2,405 (2,414 - 9 MHz) and 2,423 (2,414 + 9 MHz). Reducing frequency modulated video to under 18 MHz bandwidth is theoretically possible but the result is significantly reduced performance for reasons beyond the scope of this discussion. Suffice to say, if the modulation of the sender could be *increased* to say 27 MHz (2,414 - 13.5 = 2,400.5 and 2,414 + 13.5 = 2,427.5), the system performance would be nearly 6 dB *improved*. But with 18 MHz bandwidth, as senders now have, they can fit in 4 such channels between 2,400 and 2,483.5 whereas with the technically superior 27 MHz bandwidth there would only be room for 3 channels inside the allocated spectrum. So designers have accepted reduced performance (and coverage) because this gains them one more channel to play with in the spectrum.

One solution that might help out is worth investigation; a tuneable bandpass filter covering 2,400 (or below) to 2,483.5 (or above) allowing the user to 'tune-out' interference. I have such a device on my work bench and if successful will provide construction details here in SatFACTS.

Patriot Antennas are now in New Zealand!



www.sepatriot.com



Patriot manufactures a wide range of the best quality multi-band capable antennas in the USA from 60cm to 18.3metres.

Domestic and Commercial Receive only, plus Tx/Rx Microterminals, Vsat, MVsat, FastTrack Radome and Flyaway Systems to Earth Station Tx/Rx.

Patriot carries a wide range of accessories for the above products, plus CATV, fibre optic links and test equipment.



Distributors and retailers now required for NZ, Australia and the Pacific Islands. For further information contact +64 21 272 6618 or email advancedaerials@xtra.co.nz

the centre (see drawing). The dipole is soldered to the copper clad PCB. Note here - the total length from end to end of the dipole is 59mm but this is the total distance of two smaller lengths (each identical to the other) less the open air distance of approximately 2.5mm where the two halves are individually joined to the RG6 transmission line. Therefore, 59mm is the final as built end to end dimension whereas the individual half-dipole rods will be approximately 28mm long. Each half is the mirror image of the other in length and positioning (see 'Dipole Details', here).

Connecting the dipole to the short transmission line (going to the input of the S-LNB). The centre conductor on the RG6 must be soldered to one side of the copper board PCB mount, the shield to the other. Note in the drawing a pair of tiny holes just on the edge of the 2.5mm gap separating the two half-board parts. These are drilled to accept the centre conductor into one hole (either one) and the shield of the RG6 in the other. There are important cautions here.

a/ The cable's shield must be capable of being soldered which rules out the aluminium shield versions.

b/ The RG6 fits through the 220mm long aluminium dipole support tube and it must be prepared on the solder-end so that the shield (not even a strand of shield) does not touch (make connection to) this support tube (if this happens, performance suffers badly).

c/ A quick-set epoxy can be used to affix the cable into the end of the tube at the dipole end.

d/ Use a multimeter and check that there are no shorts between the dipole support tube and either half of the dipole.

When the dipole support tube is slide into the mounting block, seal the back end as well with a rubber boot, or self-amalgamating tape so that moisture does not ingress and destroy the system.

Temporarily adjust the dipole support so the dipole rests 170mm out in front of the trough with the dipole vertical (parallel to the trough). We'll tweak for maximum shortly.

The type N connector on the input to the S-LNB is the next hurdle. Ideally, for our particular S-LNB application, this would be another female F connector so that F to F would be a quick connection. It is not and locating a 70/75 ohm type N male to F female adapter has so far eluded me. I sourced a 50 ohm type N to RG-58 (50 ohm) connector and carefully drilled the parts to accept RG6, accepting the impedance mismatch of the 50 ohm to 70/75 ohm N connector on the S-LNB.

The mounting bracket. The antenna will affix to a mast (piece of pipe), which may or may not be installed in an antenna rotor (I still hand twist mine which is less than ideal), a tower leg or something substantial. My method, as shown (see photos), is for mounting at the top of a piece of pipe/mast and yours may differ requiring some rethinking of your mounting bracket. Note that if you mount the antenna 'part way up' a mast, the mast at the rear will get in the way of the RG6 cable and the dipole adjusting rod/tube so plan ahead.

For maximum gain, the corner reflector should point directly at the sender-source desired (that would be the dipole element) and a one time adjustment of the focal point. This is done by using a signal detection device if available (such as a 'Sat-finder') just as you would adjust a dish for C or Ku. If you set-up a sender 10 metres or so in front of the antenna with the sender antenna and dipole at the same elevation, a

battery operated meter capable of providing power to the S-LNB makes the exercise totally in the yard. I, however, found my Katrein meter actually works (sort of) at 2.4 GHz directly which means the dipole could be adjusted (in and out for maximum indicated signal) if the sender is within 10 metres of the corner reflector.

Check to verify the dipole is in the exact centre of the reflector. Cautions here: Don't stick your hand up there to move it around - the hand will create false readings as will your body close to the antenna. I used a wooden satay stick to gradually move the dipole from side to side until maximum meter reading is obtained (don't use anything metallic for this!). If you find the hole supporting the dipole mount in the nylon block is slightly loose, use a small spacer under the dipole support at the hole to bias it back plumb with the line of the reflector.

Now tighten the two set screws that will clamp the dipole support rod to the nylon block and mount the antenna into a more permanent position. Ideally, a light-duty TV antenna rotor will make remote rotation to change reception directions less cumbersome than running in and out the door to check the quality of reception on a TV screen.

Disclaimers

More technically inclined readers will perhaps object to my use of a 'balanced dipole' connected directly to 'UNbalanced' coaxial cable. In this antenna system, the RF signal current flows in the centre conductor and the shield is a ground return. The problem here is the coaxial cable shield acts like an extension of the half of the dipole to which it is connected. This would be a problem if the antenna was being used for transmitting as the dipole would represent the load for the RF. As this is receive only, the 'load' is in fact the S-LNB, 70 ohm, and lacking a reactive component. I did try various methods of correcting this balanced/unbalanced problem (the 'bazooka match' being the easiest to experiment with) and none of this appeared to make a measurable difference with antenna performance. In other words, it works well enough.

Finally a word of caution. Most people use their senders for relaying TV (FTA even), pay or as appears to be quite common, DVD or VCR movies. However, a few inventive folks use senders for other purposes - security surveillance or room monitors, for example. They tend to install the systems and then 'forget' there is a camera running in the room they are occupying at any given instant. You may see (and hear) things which are decidedly very private (!) and other folk's privacy should/must be respected. How would you feel if the roles were reversed? I personally feel you should avoid the temptations to record such material, or share what you happen to see/hear with any third party. In fact, in the interest of neighbourhood 'harmony' it is probably best if you also not disclose what the funny little antenna on your roof does at all! Electronic voyeurism of your neighbour's 'private' life remains a politically incorrect activity.

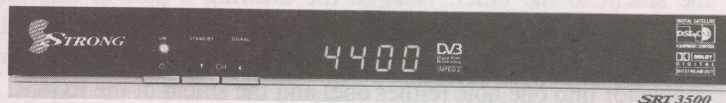
Snooper antenna - footnotes

- 1/ FM or frequency modulation is the same format used by analogue satellite transmissions. However, analogue satellite is typically 27 or 36 MHz (band)width; senders reduce width to 18 MHz.
- 2/ A 'mobile rig' would also make an interesting project allowing 'snooping' in commercial areas where wireless security cameras are heavily used.

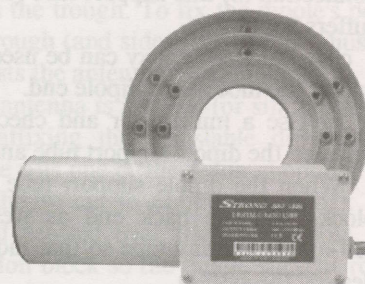
Receivers
LNBS
Dishes
Positioners
Actuators
Switches



SRT 3500 12V FREE-TO-AIR SATELLITE RECEIVER



SRT L926 OUR NEW 15K C-BAND LNB



 **STRONG**

HDTV is actually functional

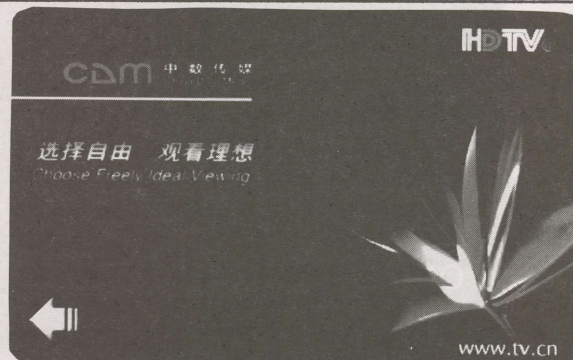
Chinese Engineering has their version of HDTV on the air: A report

Report compiled by SatFACTSer Lou Jun, ShenZhen
Aluo-Sat Co, Ltd (www.aluo-sat.com)

HDTV (high definition television) is already established in China. Advertisements of HDTV-ready-televsions appear in all sorts of media daily. HDTV is already functional in China. Advertisements reveal products available cover the range from 720P (progressive scan with 1280 x 720 pixels) and the 1080i (interlaced with 1920 x 1080 pixels). Additionally, Japan and (South Korea) are also transmitting HDTV via satellite and for those with larger dishes, reception is possible in many China locations.

The very first HDTV channel within China is called CCTV-HD (www.tv.cn), using three simultaneous encryption systems (Iredeto, NDS and Novel-TongFang). This channel has been broadcasting throughout Asia on AsiaSat 4 (120E); 4060H, Sr 27.500). CCTV-HD began testing on September 1 (2005) and began regular scheduled transmissions 1 January (2006). The channel provided 15 hours of programming during the test period, enlarged to 18 hours as of January 1. The programming includes movies, original Chinese drama, and cultural events on this channel and will launch a second channel of only movies during 2006. Live football during the World Cup Soccer FIFA 2006 in Germany is also planned.

There are two ways to view the CCTV-HD inside of China. The subscription fee is 120 RMB per month. And you need to

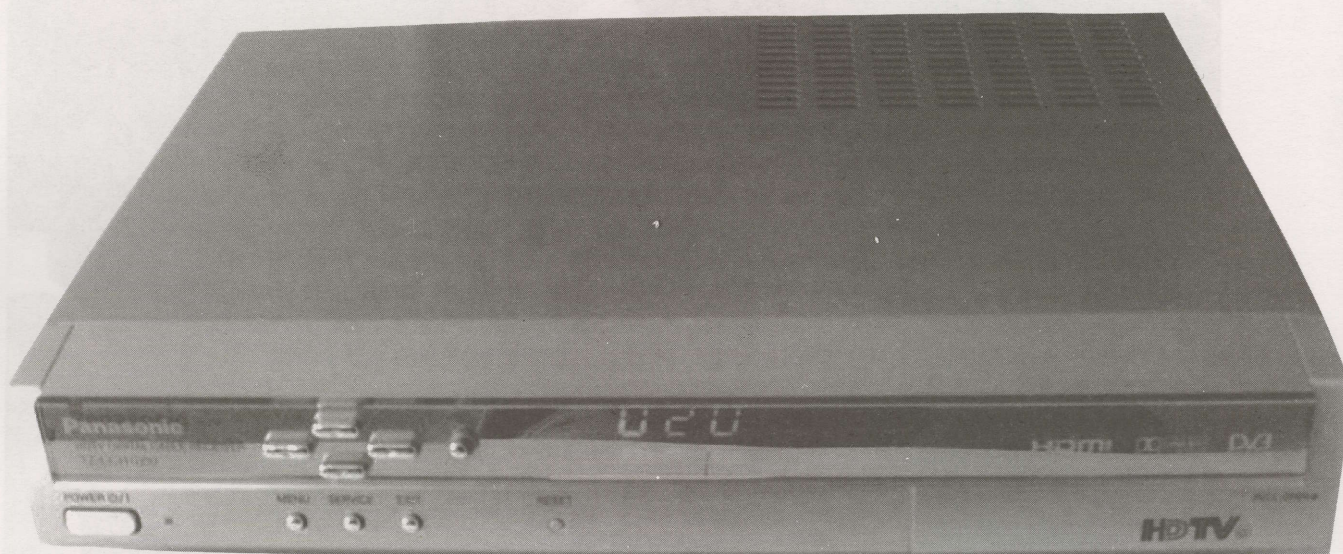


CCTV-HD smartcard for use in Novel TongFang DVB-S receiver. Encryption format 'unique' to China.

purchase a set-top-box (STB; such as the Panasonic unit show below), DVB-C version, to enjoy the programming via a local cable system. When local cable systems are not equipped for HDTV, then users purchase a DVB-S HDTV receiver and a C-band antenna.

Receiver manufacturers currently in the marketplace include Panasonic, Hitachi and Hisense. These are early days for HDTV, although a number of local stations are planning to broadcast their own HDTV in the near future. I will provide further reports. SatFACTS readers may contact me via Email at 07552173350@china.com

Panasonic TZ-CCH1000A HDTV receiver for DVB-C



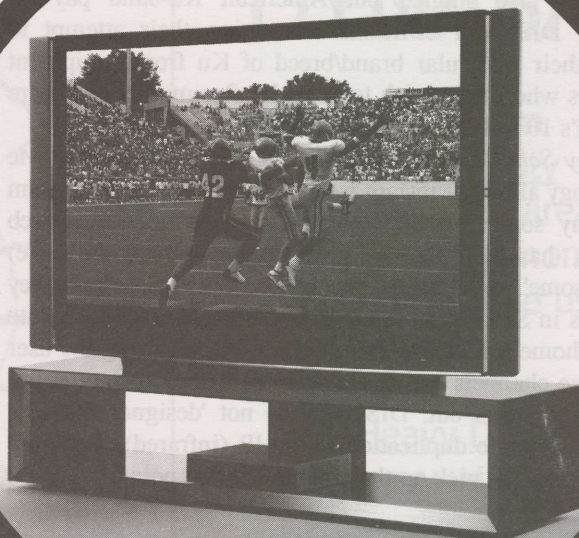
The standards. Chinese government bureaucrats are attempting to separate their country from world-wide patent pools covering software such as Codec MPEG-4/ H2.64 and HDTV. If China can prove a case for their own compression standard, without involving 'western patents', hundreds of millions of dollars will be saved (retained in China). Cable and satellite STBs, 3G phones are involved in this attempt to end-run the existing world patents. China's answer is 'AVS (compliant) chips', China's response to the western world's codec and MPEG standards. AVS chip sets, first for satellite TV receivers, are expected to be in the marketplace by the end of this year. At the end of this trail - China wants domestic digital standards, not western, attracting royalties.

TV 2Me

TV2Me® Personal: 2nd Generation Personal Video Server for home use. Space-shift your full range of cable or satellite television programs anywhere. US \$4,750.

TV2Me® Commercial: Dual-Core H.264 Compression scheme for increased stability. Multi-thread encoding for increased resolution and low CPU duty cycle. Conservatively rated - suitable for ENG and STL applications. US \$8,500.

Space-shift™ from here to there.



TV2Me® Special Order: Dual-Xeon processor-based Space Shifter (H.264 VBR) that's ready for anything! Advanced signal pre-processing combined with four-thread encoding produces unsurpassed resolution, even at low bandwidths. Substantially reduced latency is typically < 2 seconds! Every component has been specified to accommodate high-speed encoding and more complex, processor-intensive compression algorithms as are expected in the future. Remote status monitoring, diagnostic and upgrading capability included. Components chosen for cool performance and 24/7 reliability (< 60% duty cycle); over-built power supply, five cooling fans. US \$15,000.

Your hometown TV. Anywhere.

www.TV2Me.com

Shift happens...

TV2Me systems require Internet bandwidth of 384 kb/s or greater. 512 kb/s recommended, 768 kb/s ideal.

Kenny Schaffer and Tim Alderman discussing lack of uniformity with RCUs

SatFACTS for December (2005; #136) carried a report created by California-based *Tim Alderman* concerning the status of C-band analogue in North America. In that report Alderman also singled out American Ku-band pay-TV operator DISH for criticism concerning their attempt to isolate their particular brand/breed of Ku from equipment suppliers who might wish to provide after-market hardware to DISH's 10 million plus subscribers.

Kenny Schaffer, New York-based creator of the TV2Me technology allowing instant web transfer of any TV program from any source to any other broadband supported web location, has also found DISH hardware (and software) 'troublesome' to integrate into his system. One of the key elements in Schaffer's system is TV2Me's ability to emulate your at-home satellite or cable STB RCU, allowing the user to change channels and select services from a distant point. Alas, as it turns out, DISH TV is not 'designer friendly' when it comes to duplication of the IR (infrared) codes and instructions. We pick up the dialogue at that point.

Schaffer: "I read with particular interest Tim Alderman's dissection of the cheap, greedy, should-be-illegal if tested, actions of the DISH Network and its genetic mould, Charlie Ergen. A friend was going mad trying to get his DISH 522 receiver to work with his TiVO. He loves his TiVO. Suffice to say, no IR codes from any library worked to control the DISH receiver. A simple Google 'DISH 522 problems' returned hundreds of hits, all adamant:

" 1) Echostar had gone out of its way, as Tim wrote in SatFACTS, to capture customers by making them use indefensibly over-priced DISH components. For example, the normally simplistic handheld remote control (RCU). No (not one) DISH receiver can be worked by a universal remote which then means that a DISH receiver cannot be controlled by a TiVO. So much for competition to the decidedly inferior DISH version of DVR.

" 2) On top of that, the 522 (and possibly others) 'features' a DISH logo screen saver that automatically pops up after four hours. It cannot be defeated or changed in setup. Ergo, even if our friend would set the receiver to a station to be recorded - whether TiVO or VCR - if the time of the recording is more than 4 hours hence, the recorder will capture only the screen saver.

" In this case my friend had installed DISH only a month ago. Of course no mention was made of this incompatibility. A lame 2nd tier supervisor actually stated, 'It is incumbent upon the customer to ask...' whether DISH is compatible with TiVO (or for that matter, any universal RCU).

" I suggested that along with the TiVO question, it might be equally incumbent on the customer to ask if the thing would work if the temperature is over 70F - perhaps Ergen also sells air conditioners! Or you purchase a car and find the warranty is null and void if you change the oil anywhere but the manufacturer's appointed dealership.

"Fine print? Possibly some bullshit is buried there in fine print (it stays in my mind that a very hip software manufacturer recently put a '\$1000 reward' at the bottom of his product's End User License Agreement - '\$1000 to the first person to call in an report this line of text exists'. More than 100,000 units were sold before they had a call!)

"Returning to DISH, calls to high-level supervisors offered no solution. When I reasoned to the guy, 'Given that everything in the store is compatible with TiVO', he shot back 'TiVO is not compatible'. It would seem to me that it is DISH that is not compatible, and it should not be incumbent upon the users or potential customers to ask about compatibility.

"Unquestionably, incompatibility, as deliberately engineered into DISH, is for a simple reason: Every other manufacturer in the world uses different - but programmably compatible variants of PWM (pulse width modulation) IR - for interoperability (say between Sony, Panasonic, Nokia and so on). DISH has put a lot of time and thought into coming up with a scheme using phase shift modulation (PSM). Greed, greed, greedy to a fault. *Gotcha!*

"And the 'screen saver' feature - unforgivable.

"I got my friend off of DISH - and as much as I hate it - onto the Dirty Digger's satellite (DirecTV) which has no such issues. And rather than paying the \$275 DISH demands for breaking his contract, he will be meeting them in Los Angeles Small Claims Court accompanied by a gaggle of press folks (my friend happens to be a TV reporter for a LA major network station).

"Don't feed the DISH Pig!"

Tim Alderman's response:

"Timing is everything. Remember (SF#136) I have been a customer of the Pig in the Sky only because of my previous attachment to VOOOM programming, consumed by the voracious pig. My 811 IRD was suddenly wiped clean off the DISH web site in favor of a new model called the VIP-211. I called their 800 number to ask why and was told 'new, additional programming' is now available. 'What new programming', ask I. In fact, there is only one - ESPN2 HD. So I played dumb and asked about when we would have local (into local) High Def and the answer was, 'Not today, but soon'. Entrepreneur Ergen apparently has a new bird spot, 129W, where additional HD will be housed. So I asked can I move my 148W dish already in place to 129? The answer was emphatic: 'Oh no, we MUST send out a technical crew to install a new DISH 1000 antenna'. So, my Dish-Pro LNBf won't work either? The response was, 'I cannot tell you that, sir'.

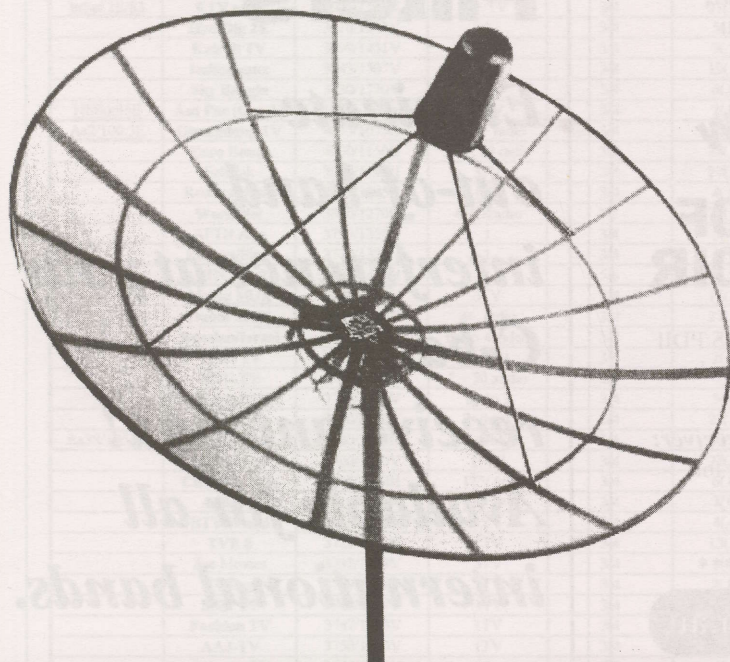
"I passed on their offer. But returning to your friend's problem with DISH - they are *now* UHF (remote control) only, hence the problem encountered. DISH is the home of incompatibility with a long history of cutting off older units; my 811 joins an earlier 'Tracker Premiere 70 IRD' which is now a monument to yesterday's promise.



**PACIFIC
SATELLITE**

(AUSTRALIA) PTY. LTD.

ANTENNA & RECEIVER SUPERMARKET



DYNASAT

7.5'/2.3m

Medium Duty

(Fine for most areas,
applications; economical,
general purpose use)

8'/2.44m

Heavy Duty

(For heavy wind areas)

ONE brand does NOT fit all requirements; at Pacific Satellite you have mega-choices!

Pacific Satellite is the **EXCLUSIVE** authorised **DISTRIBUTOR**
for **COMSTAR** antenna products in Australia.

Model ST-12



COMSTAR

Strong, heavy duty,
suitable for
cyclone areas!

**...is a registered trademark for the world's
BEST C/Ku rolled Expanded Metal 2 - 13
GHz antennas.**

Comstar products are simply unbeatable -
available from
3m to 4.5m and every one a winner!

Products are also available through this quality distributor:
V-Com (Australia) Pty Ltd (VIC) Tel: (03) 9886 8018
Fax: (03) 9886 8787

3/71 Beenleigh Road, Coopers Plains, Qld 4108 Australia

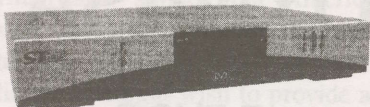
Ph: +61 7 3344 3883 Fax: +61 7 3344 3888

Email: info@psau.com <http://www.psau.com>

MELBOURNE SATELLITES

SINCE 1991

21 TURBO DRIVE, BAYSWATER VIC 3153
Ph. 61 (3) 9738 0888 Fax. 61 (3) 9738 0001
Email. sales@melbournesatellites.com.au



NEW

STGold ST2000F ST4000IR

ST2000F - FTA Digital Satellite Receiver:

Front Channel Display & Buttons, Dual Scart, RCA, S/PDIF,
Dolby Digital, UHF RF Modulator, I/R Remote Control

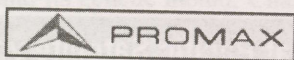
ST4000IR

FTA & IRDETO Embedded Digital Satellite Receiver:

Front Channel Display & Buttons, Smartcard Reader for
Embedded IRDETO, Dual Scart, RCA, S/PDIF, Dolby
Digital, UHF RF Modulator, I/R Remote Control

****Check our Website for further details****

www.melbournesatellites.com.au



GEOTRACK

Norsat
International Inc.

STI ★

IKUSI

HUMAX
TOPFIELD
Multimedia Home Gateway

AZURE ♦ **SHINE**

ATELLITE
STGold
ERRESTRIAL

GEOTRACK

Actuator Arms

Light Duty 18" & 24"

Heavy Duty 24" & 36"

DiSEqC H-H

DiSEqC 1.2

D-ST7 2.3Mtr Heavy Duty
D-ST10 3.0Mtr Heavy Duty



STI ★

Get direct access to Trade Prices by registering your details at
www.melbournesatellites.com.au
and click the register link on the left....

Satellite Interference Filters

*Eliminate
out-of-band
interference at your
C-band
receive antenna!
Available for all
international bands.*

*Distributor
Inquiries
Welcome*



MFC
Microwave Filter Co

**MICROWAVE FILTER
COMPANY, INC.**

Tel 315-438-4700

FAX: 315-463-1467

E-Mail: mfcsales@microwavefilter.com

Web:

<http://www.microwavefilter.com>

SatFACTS Pacific/Asian MPEG-2 Digital Watch: 15 MAR, 2006

Bird	Service	RF/IF &Polarity	# Program Channels	FEC	Msym
Them3/78.5	SkyChAust	3695/1455H	up to 3	3/4	5(,000)
	ANT Greece	3672/1478H	1 TV	3/4	13(,333)
	TARBS ME mux	3640/1510H	12TV, 12 radio	2/3	28(,066)
	Ch Nepal	3626/1524V	1	3/4	15(,556)
	Mahar mux	3600/1550H	11TV, 1 rad	3/4	26(,667)
	RR Sat mux	3551/1600H	8TV, 10 radio	3/4	13(,333)
	TVK Cambodia	3448/1702H	1TV	1/2	6(,312)
	TARBS/Th5	3480/1670H	12 TV+radio	2/3	26(,667)
	Thai Global	3425/1725V	up to 7?	2/3	27(,500)
InSat 2E/83	ETV mux	4005/1145V	6+ TV	3/4	27(,000)
	Hyd Dig 2E	3910/1240V	1	3/4	5(,000)
	Kairali TV	3699/1451V	1	3/4	3(,184)
	Indian mux	3643/1507V	3	3/4	19(,531)
	Sky Bangla	3430/1720V	1TV	3/4	6(,000)
NSS6/95E	Ant Pac (Greek)	11.104H-Australia	1 TV	3/4	2(,800)
As2/100.5E	Guangdong TV	4075/1075H	1TV + radio	3/4	6(,000)
	Euro Bouq	4000/1150H	5TV, 19 radio	3/4	28(,125)
	SatLink	3960/1190H	3TV	3/4	27(,500)
	Reuters News	3905/1245H	1TV	3/4	4(,000)
	WorldNet	3880/1270H	4+/18radio	1/2	20(,400)
	APTN Asia	3799/1351H	1	3/4	5(,632)
	Reuters/Sing	3775/1375H	1	3/4	5(,631)
	APTN Asia#2	3705/1445H	1	5/6	4(,166)
	Macau MUX	4148/1002V	5TV	3/4	11(,850)
	Dubai MUX	4020/1430V	4+, radio	3/4	27(,500)
	Russian/Israel	3832/1318V	up to 4 video	3/4	7(,271)
	Trace TV	3792/1358V	1	3/4	2(,400)
	BYU-TV	3767/1383V	1 + 20 audio	1/2	6(,530)
	3-ch miniMUX	3752/1398V	up to 3	3/4	5(,640)
	Saudi TV1	3660/1490V	7+tests	3/4	27(,500)
As3S/105.5E	CETV digital	3680/1470H	1+ TV	3/4	26(,670)
	Zee bouquet	3700/1450V	10TV	3/4	27(,500)
	Ch News Asia	3706/1444H	1TV (+)	3/4	6(,000)
	Azio TV	3716/1434H	1TV (+)	3/4	7(,000)
	BTB World	3725/1425V	1TV	3/4	4(,450)
	TVB 8	3729/1421H	1TV	3/4	13(,650)
	Zee Movies	3732/1418V	3TV	3/4	6(,500)
	TV One	3739/1411V	1TV	3/4	2(,8934)
	SAB TV	3743/2407V	1TV	3/4	3(,300)
	Fashion TV	3747/1403V	1TV	3/4	2(,625)
	AAJ-TV	3750/1400V	1TV	3/4	2(,820)
	Arirang TV	3755/1395V	1	7/8	4(,418)
	Now TV +	3760/1390H	up to 10TV	7/8	26(,000)
	Star TV	3780/1370V	7(+TV)	3/4	28(,100)
	GXTV	3806/1344V	1TV + 3 radio	3/4	4(,420)
	Shaanxi TV	3813/1337V	1TV + 2 radio	3/4	4(,420)
	Anhui TV	3820/1330V	1TV + 2 radio	3/4	4(,420)
	Jiangsu TV	3827/1330V	1TV + 2 radio	3/4	4(,420)
	HLITV	3834/1316V	1TV	3/4	4(,420)
	Star TV	3840/1310H	7(+TV)	7/8	26(,850)
	Star TV	3860/1290V	5(+TV)	3/4	27(,500)
	Arabsat MUX	3880/1270H	10+TV, 14Radio	3/4	27(,500)
	Dragon TV	3886/1264V	1 TV	3/4	4(,800)
	Shandong	3895/1255V	1TV + 6 radio	3/4	6(,813)
	CCTV1	3904/1246V	1TV, 1 radio	7/8	4(,420)
	Jilin TV	3914/1236V	1TV + 2 radio	3/4	4(,420)
	Star TV	3920/1230H	4+ TV	7/8	26(,850)
	CNN	3960/1190H	8TV, 1 radio	3/4	27(,500)
	StarTV	3980/1170V	6+TV	3/4	28(,100)
	Star TV	4000/1150H	8(+TV)	7/8	26(,850)
	Sahara digital	4020/1130V	8TV, 1 radio	3/4	27(,250)
	Hubei TV	4035/1115H	1TV + 2 radio	3/4	4(,420)
	Tianjin TV	4046/1104V	1TV + 2 radio	3/4	5(,950)
	Sichuan TV	4051/1099H	1TV + 1 radio	3/4	4(,420)
	Qinghai TV	4067/1083H	1TV + 2 radio	3/4	4(,420)
	Hunan TV	4082/1068H	1TV + 1 radio	3/4	4(,420)
	Fashion/HK-Asia	4088/1062H	1TV	3/4	2(,626)
	Pakistani TV	4091/1059V	4TV, 1 radio	3/4	13(,333)
	Sun TV	4095/1055H	1	3/4	5(,554)
	PTV National	4106/1044V	1TV, 1 radio	3/4	3(,333)
	TVB8 Mux	4111/1040H	4TV	3/4	13(,650)
	Indus News	4115/1035V	1	3/4	3(,331)
	CCTV bqt	4129/1021H	4 TV, 4 radio	3/4	13(,240)
	Zee Bqt #2	4140/1010V	8(+TV)	3/4	27(,500)
	Henan TV	4166/984V	1TV + 8 radio	3/4	4(,420)
	Fujian TV	4180/970V	1TV + 2 radio	3/4	4(,420)
	Jiangxi TV	4187/963V	1TV + 2 radio	3/4	4(,420)
	Liaoning TV	4194/956V	1TV + 2 radio	3/4	4(,420)
Cak1/107.5	Indovision	2.535, 2.565, 2.595, (S-band)	33(+TV)	7/8	20(,000)
T'Kom/108E	IndoBqt	3460/1690H	up to 6	3/4	28(,000)
C2M/113E	TPI	4185/965V	1	3/4	6(,700)
	TVE Asia-Africa	4160/990H	1	3/4	5(,632)
	Anete	4144/1006V	1	3/4	6(,510)
	Kabelvision Mux	4080/1070H	7+ TV	7/8	28(,125)
	Indostar	4074/1076V	1	3/4	6(,500)
	Satelindo	3935/1215H	1	3/4	6(,700)
	Bali TV	3926/1224H	1	3/4	4(,208)
	Indo MUX	3880/1270H	3+ TV	7/8	28(,121)

Receivers and Errata

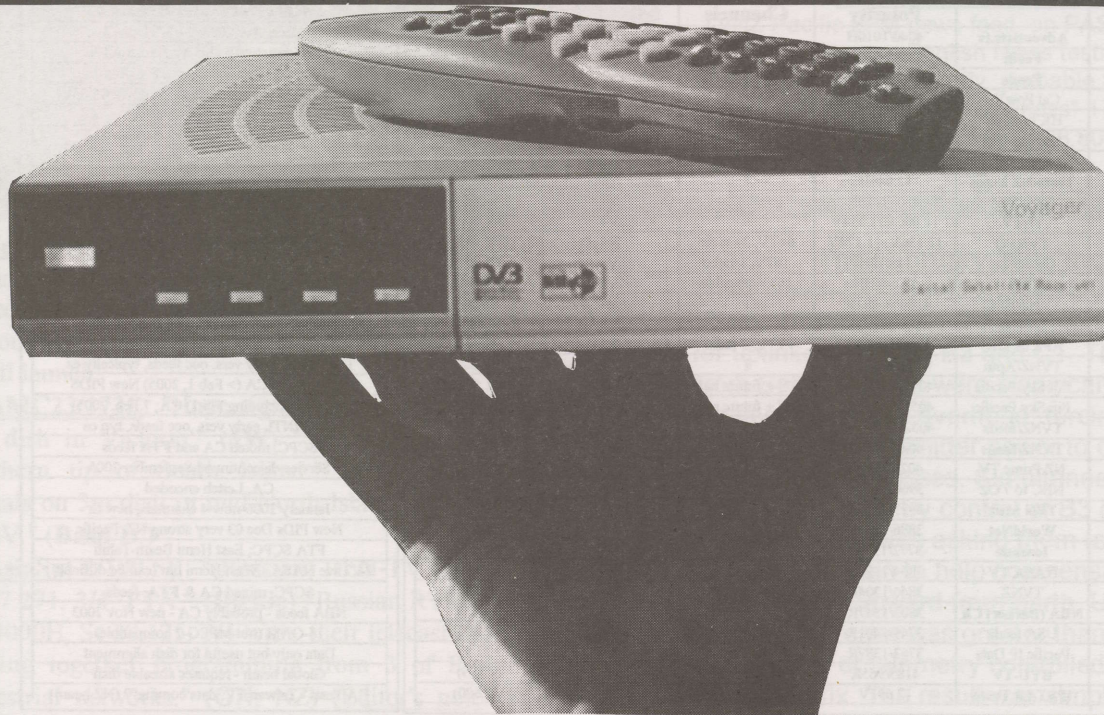
CA (#1, 3); FTA audio #2
Late July 04: room for more (FTA)
CA + 23FTA(A1TV, IRB3, Visjon Norge, Pakistan)
New 03/03; FTA
Thai + Indian services; FTA inc. Vibe TV, Sindh TV
3TV, 5radio inc. Hellas TV Greece FTA
FTA
3FTA: TV5, VTV4, ATN Bangla
FTA (reaches SE Australia)
Several ETV now here; wide beam
SCPC, OK E. Aust. wide beam
SCPC, OK E. Aust wide beam
corrections 12/02
New - November 2002
(still) FTA 11-04; was 11.083H
July 04: FTA
FTA TV + radio; Russia, Port, Spain, Italy/Euro Bqr
Real Madrid (V769, A770) English FTA
Was 3923H; sometimes FTA
FTA; multiple audio services V2360, A2320
Sometimes FTA; also 3895Vt
FTA & CA
FTA and CA - NASA reports included
5 chs TV, FTA, some tests
FTA; Dubai Sports Ch some English, soccer-
Two Israel, two Russian (REN-TV)
new here Dec 2004; Euro-French music videos
Increased coverage; great variety audio chs(03-05)
Sun-TV, Surya TV, KTV (FTA)
FTA MCPC; Yemen, MBC EUROsport tests
replaces analogue same freq; V33, A32
Now SECA 2 CA (10-04); Radio Aust. Eng. A2011
English + V1160, A1120; 525, 625 versions
Was parallel to 3640Hz analogue (now gone)
Conax CA, all Hindi films
Also reported 3.333, 3/4 October 2005
SAB may no longer here here; moved to NSS-6?
new frequency October 2005
New April 2005; English, urdu
FTA SCPC; New PIDs V3601, A3606 June 2003
CA + FTA; Euro bouquet moving here (late 2005)
NDS CA (Pace DVS211, Zenith)
Guangxi TV; was As2
Was As2
Was As2
Was As2
Was As2; HeiLong
NDS CA (Pace DVS211, Zenith)
NDS CA (Pace DVS211, Zenith)
New April 2004: link to Optus B3 Globecast
Shanghai
Apparently Mongolia
Star Sports Asia (+), FTA NTSC; V514, A670 (10-04)
PowVu CA; new SR Apr 29: CNN radio FTA
NDS CA; Star News India FTA VPID 514, APID 648
NDS CA w/ 4(Chinese) FTA
New Sr September 2004
Was As2
new December 2004
Was As2
Was As2
Was As2
New July 2005
new Sr, channels, Nov 2003
"History Channel" - SCPC, some English
MATV Ch Movies now Irdeto 1
Hindi (+ "Plus"); day parts
moved from 4115
Now SECA 2 CA (10-04); 1 occ. FTA (varies)
Was As2
Was As2
Was As2
Was As2
NDS CA using RCA/Thomson,
Pace IRDs; 2.535 has 2 FTA
also 3586H/17.500, 3496H/19.615
FTA SCPC; NT/NC only
New August 2003
change from 4055V; FTA SCPC
also try 3500H, 27.000, 3/4; strong NZ
FTA (new 06-03); V2201, A2202
test card - only - reported
FTA, may not be active full time
FTA; Sr change 01/03; erratic

Bird	Service	RF/IF & Polarity	# Program Channels	FEC	Msym
	Brunei/Sing	3733/1417H	1TV	3/4	6(,000)
	SCTV	3726/1424V	1TV	3/4	6(,620)
	RCTI	3473/1677H	2	3/4	8(,000)
As4/122E	CCTV internal	4100/1050V	6	3/4	27(,500)
Jc3/128	Miracle Net	3996/1154V	3 up to 6	5/6	22(,000)
	Asian bgt	3960/1190V	up to 8	7/8	30(,000)
Ap6/134E	Multiple	4140/1010V	up to 8	7/8	27(,500)
T18/138	Tests	3460/1690V	8	3/4	30(,000)
	LTV Laos	3804/1346V	1		
Am3/140	STS +	3731/1419R	1	3/4	3(,200)
Jc2A 154	BYU-TV	3915/1245V	1+ 20 languages	3/4	4(,166) (?)
MeasS2	Astro Mux	11.602H	up to 17TV	3/4	41(,500)
	VTV MUX	11.522V	3 TV	3/4	9(,766)
B3/152	AuroraBiz	12.407V	4 TV, 10 radio	2/3	30(,000)
	UBI/tests	12.425V	up to 13 TV + radio	3/4	22(,500)
	Globecast 2	12.525V	13 TV, 8 radio	2/3	30(,000)
	Globecast (feeds)	12.550-555V	1TV	3/4 & 2/3	6(,110/670)
	Globecast	12.564V/T13	2+ TV	2/3	30(,000)
	UBI/tests	12.613H/T14L	11+TV	3/4	22(,500)
	UBI/tests	12.640H/T14U	11+TV	3/4	22(,500)
	Globecast 1	12.658V/T7	14TV, 15 radio	2/3	30(,000)
	UBI/tests	12.674H/T15L	11+TV	3/4	22(,500)
	UBI/tests	12.701H/T15U	11+TV	3/4	22(,500)
	WA ABC	12.702V	1 TV, 1 radio	7/8	14(,288)
	WA SBS	12.720V	4TV, 2 radio	5/6	12(,600)
	WA GWN/WIN	12.738V	2TV	7/8	14(,295)
CI/156E	Internet tests	12.288V/T1L	no regular TV	1/2 -?	28(,650) (?)
	Aurora	12.324V/T1U			
	Pay TV	12.365V/T2	11TV, 2 radio	3/4	27(,800)
	Aurora Home	12.407V/T3	5 TV, 13 radio	2/3	30(,000)
	Pay-TV	12.447V/T4	5TV, 4 data	3/4	27(,800)
	Pay TV	12.487V/T5	3+ TV, data	3/4	27(,800)
	Aurora 2	12.527V/T6	7TV, 20 radio	3/4	30(,000)
	Pay-TV	12.567V/T7	10 TV	3/4	27(,800)
	Pay-TV	12.607V/T8	10 TV	3/4	27(,800)
	Pay-TV	12.647V/T9	10 TV	3/4	27(,800)
	Pay-TV	12.692V/T10L	6TV, 27 radio	1/2	28(,650)
	Aurora MUX	12.728V/T10U	4TV, 17 radio	1/2	24(,450)
	Austar	12.305H/T11	6TV, 24 data	3/4	30(,000)
	Pay-TV	12.358H/T12	10 TV	3/4	27(,800)
	Pay-TV	12.398H/T13	10 TV	3/4	27(,800)
	Pay-TV	12.438H/T14	6TV, 3 data	3/4	27(,800)
	Pay-TV	12.478H/T15	10 TV	3/4	27(,800)
	Pay-TV	12.518H/T16	10 TV	3/4	27(,800)
	Pay-TV	12.558H/T17	10 TV	3/4	27(,800)
	Pay TV	12.598H/T18	10 TV	3/4	27(,800)
	Pay-TV	12.638H/T19	10TV, 30 radio	3/4	27(,800)
	Pay TV	12.688H/T20	11TV	3/4	27(,800)
B1/160	7 Central DTV	12.365H	1TV	3/4	5(,100)
	Occ. feeds	12.380H	1 TV - *	3/4	6(,111)
	Occ. feeds	12.384V	1 TV - *	3/4	6(,111)
	Net 7 service	12.397H	1	3/4	7(,200)
	Imparja mx	12.379H	2TV + 8 radio	3/4	5(,424)
	7 digital feeds	12.397H	1TV	3/4	7(,200)
	Feeds to NZ	12.411V	1 TV	3/4	6(,111)
	SBS Mux	12.420H	3+ TV, 2+ radio	5/6	12(,600)
	TVNZ DTH	12.456V	5+TV	3/4	22(,500)
	TVNZ Tests	12.483V	up to 11TV	3/4	22(,500)
	Sky NZ	12.519/546V	7TV/7TV	3/4	22(,500)
	Sky NZ	12.581/608V	6TV/6TV	3/4	22(,500)
	Sky NZ	12.644/671V	9TV	3/4	22(,500)
	ABC HDTV	12.610H	5TV	7/8	14(,3288)
	Sky NZ	12.707/734V	8+TV	3/4	22(,500)
PR/166E	ABS-CBN	12.575H	4+TV, 4+ radio	2/3	13(,845)
	JEDI/TVB	12.686H	11+ TV	3/4	28(,126)
	ABC A-P	4180/970H	2TV, 2 radio	3/4	27(,500)
	Disney Pac	4140/1010H	typ 6 TV	5/6	28(,125)
	Taiwanese MUX	4080/1070H	12+ TV	5/6	30(,000)
	NHK Joho	4060/1090H	7TV, 1 radio	3/4	26(,470)
	FOX Mux	4040/1110V	up to 5TV	7/8	26(,470)
	NET +	4121/1029V	1 TV	3/4	4(,774)
	ESPN USA	4020/1130H	8+TV, data	3/4	26(,470)
	Discovery	3980/1170H	8 typ.	3/4	27(,690)
	CalBgt/Pas8	3940/1210H	up to 3+ FTA	7/8	27(,690)
	CNBC HK	3900/1250H	up to 7TV	3/4	27(,500)
	Filipino MUX	3880/1270V	up to 8TV+radio	5/6	28(,694)
	TaiwanBgt	3860/1290H	12TV + 30 r	5/6	28(,000)
	CCTV Mux	3829/1321H	up to 4+ 1 radio	3/4	13(,240)
	TVBS-N	3836/1314V	1FTA, 4+ CA	3/4	22(,000)
	EMTV PNG	3808/1342V	1 + 2 radio	3/4	5(,632)
	CNNI	3780/1370H	3, up to 5 TV	3/4	25(,000)
	Discovery Asia	3764/1386V	Up to 6 TV	3/4	19(,850)
	MTV	3740/1410H	8	2/3	27(,500)
P2/169E	WA Mux Pv	12.281V	3+ TV, radio	2/3	27(,500)
	Ariang TV	12.401V	1TV	3/4	4(,400)
	ABS-CBN	12.575H	4TV, 2 radio		13(,845)
	Test mux	12.715H	6+ TV	2/3	30(,000)
	TARBS feeds	4090V/1060V	9TV + radio	3/4	21(,000)
	BBC SCPC	3986/1164H	1TV	1/2	5(,700)

Receivers and Errata

FTA ; Singapore 23hrs, Brunei 1 hr, Brunei V1200 was on 4048V, New Caledonia, parts of Australia FTA SCPC; Australia, New Caledonia, some Eng. Irdo2 2; 4060V HDTV CA; also try 4020V PowerVu; some FTA (Ch. 1 & 3) CA & FTA NTSC: Japan, Taiwan (ApStar 6: also 4180V same #s; analogue also) also try 3660/3540VVI, Sr 30,000, 3/4, some FTA VPID 512, APID 4112 North beam; also try 3875R, 12.475, 1/2 Strong NZ & Australia; may now be 1/2, 6.525 Aust East beam - 3 FTA + 14 CA WA only? Skew path, intended Asia differs from 12.407 C1; tune ch FTA; NZ+Au T11/lower testing late May 2005 NZ + Au, FTA Mcript CA occ feeds, NZ + Au; recently 12.553V AMTV, Healing only FTA svcs now here High performance beam; not NZ, new PIDS 10-05 High performance beam; not NZ; new PIDS 10-05 NZ + Au (Mcript, PowVu capable) High performance beam; not NZ; new PIDS 10-05 High performance beam; not NZ; new PIDS 10-05 ABC WA tests, FTA SBS, radio tests WA FTA Irdo2 V2 CA, tests (GWN, WIN) Now on Australia + NZ beam; SCPCs not currently in use Tests; SBS-NDS CA, others FTA when here NZ (90cm) + Australia (Only C1 svc left on NZ) Australia NA only (leakage to Norfolk, New Cal) Australia NA only (leakage); 9-Net x 3 widescreen Arrow radio (still here), tone FTA Pay-per-view movies; CA Pay-per-view movies; CA Pay-per-view movies; CA ABC for Foxtel/Austar; previously 12.288V changes September 2005 Austar inter; Expo FTA NDS CA + Mcript, CA CA, subscriptions available Australia, Norfolk Sky News active; 'Help x 2' FTA CA, subscriptions avail Au, Nrlk; TVSN FTA CA, subscriptions available Australia, Norfolk 'Home' CA, subscription available Australia, Nrlk CA, subscriptions available Australia, Norfolk CA, subscription available Australia, Norfolk CA, subscription available Australia, Norfolk Central beam; Freq change 08-05 * - plus 12.451H, 12.460H * - plus 12.293V, 12.402V, 12.411V Full schedule less commercials - links, may be CA PIDs vary; also try 12.360, 12.370 occ. digital feeds; typ fla Often NTSC; USA-Australia-NZ Also 12.437H, 12.456H same params; HDTV+WS FTA 7 channels (TVNZ x 4); +Maori, DW, CCTV9 Testing late June; 16:9 added late July NDS CA, subscription available NZ NDS CA, subscription available NZ NDS CA, subscription available NZ also see 12.626, 643, 670, 688, & 706H NDS CA, subscriptions available NZ June 2002-Irdo2-2 CA Dateline west; also east PAS2, 3901V PowVu CA Tests - CA service announced PowVu CA & FTA; subscription available was PAS-2, previously 3992V; feeds FTA NET25 + FTA; new PIDS April '03; reload PowVu CA; ch 11 DCP-CCP bootload; audio FTA PowVu/CA (some audio FTA) PowVu CA & FTA (EWIN + CBS + TBN +) NDS CA (6 channels); one test card occ FTA Myx FTA V1960, A1920 + radio FTA Mixed FTA & CA; STC gone (CA) PowVu FTA, replaces PAS-2 svc Difficult because of CCTV cross pole PowVu CA PowerVu; some audio FTA PowerVu; Asian MUX; new parameters Nov '03 # 8 MTV China FTA V289, A290; rest CA PowVu CA, WIN, ABC NT, SBS; status unknown Test - may not stay permanently Temp FTA; subs Aust 011-800-2270-0722 initially with 6 NTSC colour bars Occ FTA (Chile +); BIG power reduction Nov 03 BBC World moved here January 2005

Pay less - get MORE.



\$120 each (lots of 5) and you receive VOYAGER series Universal CA-Irdeto 2 (1 & 2, Viaccess 1 & 2, Seca 1 & 2, Nagra, Conax), Auto-scan, multi-languages, SCART. **FTA? \$100** each (lots of 5), Auto-scan, multi languages, SCART. All units fully NZ 'C-Tick' approved, TV, radio, edit, teletext, EPG, 6000 ch memory - more! . Dish kits, 65cm > 3m (mesh), LNBs!

www.satlinknz.co.nz - Peter - 0274937025

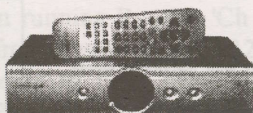
KRISTAL
electronics
ABN 78010884938

Unit 2/22 Hills St, Garbutt,
Townsville Queensland 4814.

Phone: (07) 47287704 Fax: (07) 47287759
eMail: philip@kristal.com.au
Web: <http://www.kristal.com.au>

wavelength

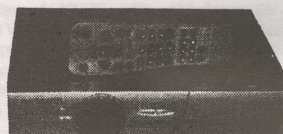
DSR-192



Compact Digital **Satellite** receiver with Scarts, SPDIF Optical out, Modulator, Diseqc1.2 and loop through connection.

wavelength

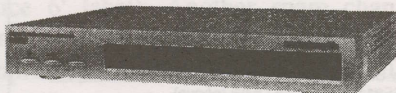
DSR-807



Compact Digital **Satellite** receiver with UCAS slot, Scarts, SPDIF Optical out, Modulator, Diseqc1.2 and loop through connection

wavelength

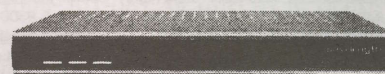
DSR-103



FTA Compact Digital **Satellite** Receiver With Modulator & SPDIF Coaxial output Diseqc1.2 and loop through connection.

wavelength

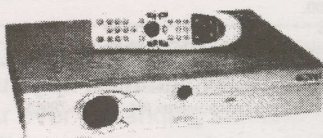
DTR-279



FTA Compact Digital **Terrestrial** Receiver SD Standard Definition Digital Terrestrial Receiver with Philips tuner, modulator, Wide Hot Key, Teletext & Logical Channel

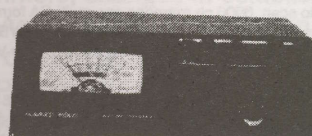
OPENTEL

ODS4000IR



Digital **Satellite** Receiver with one embedded Irdeto Smart card slot With Modulator & SPDIF Coaxial output, Diseqc1.2 and loop through connection.

Marco Polo basic Satellite finder



Satellite finder with inbuilt rechargeable battery, Signal level meter, tone, 13/18V output and 22KHz output.

Wavelength Australia site is at <http://www.wavelength-australia.com>

Bird	Service	RF/IF & Polarity	# Program Channels	FEC	Msym
(PAS2/169E)	Adventists.tv	4040/1010H	1	2/3	5(900)
	Feeds	3868/1182H	1	2/3	6(620)
	Feeds	3939/1211H	2 (typ NTSC)	2/3	6(620)/7(498)
	Cal PowVu	3901/1249H	up to 8	3/4	30(800)
	HK bouquet	3850/1300H	up to 8	2/3	24(900)
	Korean Bqt	3771/1379H	1	3/4	6(510)
1904/174E	IPSTAR	12.619H	1	2/3	25(220)
	Tests-NZ beam	12.646H	1	3/4	22(418)
	RFO Poly	4027/1123R	1TV	3/4	4(566)
1701/180E	TNTV	11.060&11.514V	9	3/4	30(000)
	TVRFO	11.136V, 11.174V	6+TV, 3+ radio	3/4	23(149)
	Canal+ Sat	11.610H	16TV, 1 radio	3/4	30(000)
	PBS	12.648HH	16TV possible	3/4	28(066)
	TVNZ/BBC	4186/964RHC	1	3/4	5(632)
	TVNZ	4178/972RHC	1	3/4	5(632)
	AFRTS DTS	4175/975L	3 TV, 3 radio	2/3	3(680)
	TVNZ/Aptn	4170/980RHC	1	3/4	5(632)
	Fiji Sky Pacific	4095/1055LHC	6TV + future radio	3/4	16(505)
	Fiji Sky Pacific	4055/1095LHC	6TV + future radio	3/4	16(505)
	TVNZ/feeds	4052/1098RHC	1	3/4	5(632)
	TVNZ feeds	4044/1106R	1	3/4	5(632)
	NZ Prime TV	4024/1126L	1	2/3	6(876)
	NBC to 7 Oz	3960/1190R	1	7/8	6(447)
	TBN Mux	3927/1223R	4TV	2/3	11(394)
	WorldNet	3886/1264R	1TV, 3+ radio	3/4	25(000)
	Icarana	3772/1378L	1	3/4	4(566)
	NASA TV	3854/1296R	1 TV	3/4	2(000)
	TVNZ	3846/1304R	1	3/4	5(632)
	NBA (Barber) Ch	3803/1347R	1	3/4	6(111)
	USA feeds	3749/1401R	4?	?	26(400)
NSS-5/177W	Pacific IP Data	3763/1387R	none-data	3/4	27.5
	BYU-TV	4185/965R	1TV, 20+ audio	1/2	6(525)
	IPSTAR Tests	12.691V	8 TV	5/6	17(600)

Receivers and Errata

New December 2003; 24/7 "Hope Chs."
FTA (occ sport); also try 3863.Sr6.100
FTA-typ NTSC-occ sport, live Shuttle
PowVu CA + FTA (includes BBC-W 05-05)
was 4148V; some FTA
Korean MUX, reload 12-04; new Sr
Tests, late May start; also 12.646H
Testing possible data links; June 2003
SE spot beam; was 4027LHC
east spot; 10TV + r each, vertical pol.
FTA 11.136 Tahitian beam, 11.174 west beam; 12/04
1+ FTA, MediaGd "2"; + 10.975 weaker
Testing Fiji region pay-TV (MDS) package (Oct '04)
DMV/NTL early vers. occ feeds, typ ca
DMV/NTL early vers., occ feeds, typ ca
DTS Direct to Sailors; audio previously FTA - gone
DMV/NTL early vers. occ feeds, typically ca
Nagravision CA (> Feb 1, 2005) New PIDS
All now (including Fiji 1) CA; 7 Feb, 2005)
DMV/NTL early vers., occ feeds, typ ca
SCPC, mixed CA and FTA feeds
Service discontinued September 2005
CA, Leitch encoded
January 2006-now 4 channels, new Sr
New PIDS Dec 03 very strong NZ, Pacific
FTA SCPC; East Hemi Beam-Tahiti
24/7 live NASA - West Hemi bm (can be difficult!)
SCPC, mixed CA & FTA, feeds
NBA feeds - probably CA - new Nov 2003
16-QAM (not MPEG-2 compatible)
Data only but useful for dish alignment
Global beam - requires sizeable dish
CA Tests - Taiwan TV: data coming?? (NZ beam)

MPEG-2 DVB Receivers: (Data here believed accurate; we assume no responsibility for correctness!)

AV-COMM R3100. FTA, excellent sensitivity (review SF May 1998); new version Sept '99. AV-COMM P/L, 61-2-9939-4377.
AV-COMM Tiny Tot. FTA, 12Vdc operated, palm sized, low power consumption; review SF#120. Contact # above.
Coship 3188C. Review SF#107. Blind search FTA rcvr; works well. Phoenix Technology Group (www.phoenixsatellite.com.au) (Irdeto 2 as well as FTA versions)
Divitone: "Left-handed" review SF#115; does "code key" entry. Available <http://www.satmax.ws>
eMTEch eM-100B (FTA), eM-200B (FTA + Ck2), eM210B (FTA + 2xCI + positioner); KanSat 61-7-5484 6246 (review SF#89)
Fortec Star Lifetime. Two versions, both blind search, code-key programmable, one X 2 CI. Review SF#119. www.aDigitalLife.com
Humax ICR1 5400 (Z). Embedded Irdeto + 2 CAM slots; initial units had NTSC glitch, now fixed. Widely available; new software avail 04-04, SF#76.
Humax ICR1 5410 (Z). Adaptable version capable of holding multi-CA systems (SF#98, 99). Widely available; original importer Sciteq (www.sciteq.com.au).
Hyundai-TV/COM. HSS100B/G (Pacific), HSS-100C (China) FTA. Different software versions; 2.26/2.27 good performers, 3.11 and those with Nokia tuners also good; later 5.0 not good.
Hyundai HSS700. FTA, PowerVu, SCPC/MCPC. Review SF March 1999. Kristal Electronics, 61-7-4788-8902.
Hyundai HSS800CI. FTA, Irdeto (with CAM) + other CA systems, PowerVu, NTSC. Kristal Electronics, above; review SF#63.
INNOVIA IDS3088. Review SF#111. Blind search FTA receiver. High quality IRD; available Phoenix Technology Group, and Satmax (<http://www.satmax.ws>).
ID Digital CI-24 Sensor. New August 2003; new lower noise tuner, extra sensitivity; CI Interface slot Irdeto 1 & 2; review SF#109. Sciteq 61-8-9409-6677.
KSF-570 FTA digital receiver, import; KSC-570 adds CI x 2 (no test or user results available). Asoft Limited, 64-4-234-1096
KSC-N550H2 'Premium Dual DVR' digital receiver (no test or user results available). Asoft Limited, 64-4-234-1096
MediaStar D7.5. New (May 00) single chip FTA; review June 00 SF. MediaStar Comm. Int. 61-2-9618-5777
MediaStar D10. FTA and Irdeto embedded CA. VG receiver; see review SF#96, August 2002. Contacts immediately above.
MultiChoice (UEC) 660. Essentially same as Australian 660, not grey market contrary to reports. Sciteq tel 61-8-9306-3738
Nokia "d-box" (V1.7X). European, FTA, may only be German language, capable of Dr. Overflow software. SF#95, p. 14.
Nokia 9200/9500. When equipped with proper software, does Aurora, originally did pay-TV services provided software has been "patched" with "Sandra" or similar program. See SF#95, p. 14, SF#96 p. 15. SatWorld 61-3-9773-9270 (www.satworld.com.au)
Pace DGT400/DVR500. Originally Galaxy (Now Foxtel+Austar). Irdeto, some FTA with difficulty (Foxtel Australia 1300-360818). UECs replaced.
Pace "Worldbox" (DSR-620 in NZ). Non-DVB compliant NDS CA including Sky NZ, no FTA; similar "Zenith" version (see SF#115, p. 15).
Phoenix 111, 222, 333 models (no longer produced): Service, backup - Phoenix Technology Group 61-3-9553-3399; www.phoenixsatellite.com.au
Pioneer TS4. Mediaguard CA (no FTA), embedded Msym, FEC, only for Canal+Satellite (AntenneCal ++687-43.81.56)
PowerVu (D9223, 9225, 9234). Non-DVB compliant MPEG-2 unless loaded with software through ESPN Boot Loader (see below). Primarily sold for proprietary CA (NHK, CMT etc). For service only - call Scientific Atlanta 61-2-9452-3388. For revision model D9850, see Scientific Atlanta (below).
PowTek. Blind search Chinese sourced, field tests rate it highly. Source jason@adigitalife.com
Prosat 2102S. FTA SCPC/MCPC, NTSC/PAL, SCART + RCA. Sciteq 61-8-9306-3738.
SatCruiser DSR-101. FTA SCPC/MCPC, PowVu, NTSC/PAL. (Skyvision Australia 61-3-9888-7491, Telsat 64-6-356-2749); no longer available.
SatCruiser DSR-201P. FTA SCPC/MCPC, PowVu, NTSC/PAL, analogue, positioner - (Skyvision - see above); no longer available.
SATWORK ST3618. Blind search FTA receiver. Fast search, problems, especially in "memory-filing" system; review SF#111. Available DMSi at tim@dmsiusa.com.
SATWORK ST3688. Blind search, 3000+ ch memory, multi-format RF modulator; improved version 3618. Review SF#113; available DMSi (above).
Scientific Atlanta D9223, D9234, D9225; Orig. PowerVu, superseded Dec 2003 by D9850. Commercial receiver, available TVO 61-2-9281-4481, John Martin
Strong Technologies SRT2620. SCPC, MCPC FTA, exc sensitivity, ease use, programming. Review SF#91 (ph. below).
Strong SRT 4600. SCPC, MCPC, PowerVu; exc graphics, ease of use, review SF#64. Strong Technologies 61-3-8795-7990.
Strong 4800. SCPC, MCPC, embedded Irdeto+ CAM slots, does code-key with additional software, Aurora. Strong Technologies 61-3-8795-7990.
Strong 4800 II. SCPC, MCPC CAM slots x 2 for Aurora +, Zee, Canal +, code key with additional software. Strong Technologies (above); review SF#103.
Strong 4890. SCPC, MCPC, 30Gb PVR, 2 CAM slots, DiSeqC 1.0, 1.2 (review SF#84), does code key with additional software; Strong Technologies, # above.
UEC Atlas/Titan (1000). New July 2003, replacing DGT400 for Austar. No SCART, L-band loop; also available Rural Electronics 61-2-6361-3636.
UEC642. Designed for Aurora (Irdeto), approved by Optus; w/own software, C-band FTA; faulty P/S. Norsat 61-8-9451-8300.
UEC660. Upgraded UEC642, used by Sky Racing Aust., Foxtel, limited FTA. (Nationwide - 61-7-3252-2947); P/S problems.
UEC700/720. Single chip Irdeto built-in design for Foxtel; unfriendly for FTA. Power supply problems, seldom sold to consumers; propensity to fall off back of trucks.
Voyager. Two models (08-05); one FTA auto scan, 8000 ch memory, one multi-CA format CAM. Satlinknz.co.nz
Winersat DigiBox 200. C + Ku basic receiver but includes Teletext for NZ TVOne, 2 VBI. Satlinknz.co.nz, fax 64-9-814-9447; long term teletext problems (loses TT).
"X" Digital. When modified with "aftermarket" Internet software, does Aurora and other V-1 CA without card; review SF#119. Strong Technologies (61-3-8795-7990).
Accessories:
Aurora smart cards. MCrypt (Irdeto V2) cards now available (Jan 2005), Sciteq 61-8-9409-6677.
PowerVu Software Upgrade: PAS-8, 4020/1130Hz, Sr 26.470, 3/4; pgm ch 11 and follow instructions (do not leave early!)
PowerVu (Pacific) repair service: Cable & Sat Svcs, Darius West, 61-2-9792-1421 (Email darius@cases.net.au)

WITH THE OBSERVERS

AT PRESS DEADLINE

TVNZ Pacific 6PM news feed on PAS-2, 3975H, Sr 4.000. Al-Jazeera English News testing PAS-7/10; watch for AsiaSat 3 shortly, probable Sr 19.850, 7/8. AMC23 officially "open for business" 172E. PAS-8 Ku into NZ on 12.284V (or, H), Sr 28.800, 8 channels mostly CA at this time.

New birds: MTSAT2 should be testing from 140E with S, Ku and Ka band transponders; no details available. JcSAT9 is scheduled to 132E sometime in April while InSat 4C with 12 Ku on board plans to operate from 74E, boresight India; also April launch.

AMC23/172E: "Huge signals including 4060V carrier on 2m dish in Victoria." (JW) "Very strong carrier 12.600V northern tip of South Island." (C.Sutton) "Very strong signals on 3m dish in mid-North Island, measuring over 100 dBuV." (Basil D.)

AsiaSat 2/100.5E: "(Russian) REN-TV is new on 3832V, Sr 7.271, 3/4, FTA." (Dickie) "Russian RTR-Planeta is new on 4000H, Sr 28.125, 3/4 with their telecast-day made up by putting together programming from 3 of Russia's leading terrestrial networks." (GN, NZ) (Editor's note: This is the ex-DW Euro Bouquet transponder and still includes RAI Italy, RTP Portugal, TVE Spain plus radio services.)

AsiaSat 3/105E: "Some sort of Cricket rights battle has placed 'Filmy' on 4020V, FTA, Sr 27.250, 3/4 for however long this lasts." (Charles)

Optus B3/152E: "Although the SF#138 UBI list remains correct (March 4), there have been changes. 20 Feb UBI reversed T15/upper/12.701H from inverted to normal but simultaneously switched T11/lower/12.425H to inverted. A new channel list 10 Feb continues to mis-label TVE as FTA. On 3 March 12.451H, Sr 22.500, 3/4 has an inverted MCPC running but no PID data (transponder was empty when rechecked 4 March); another UBI package coming?" (IF, Qld.) "Globecast updates: T5/12.525V, Sr 30.000, 2/3 has been running Russian 'Ch 1 Russia' FTA, content appears to be from Russia One. T7/12.657V, Sr 30.000, 2/3 Zee Cinema appears to have moved from channel 3 to 5 (new PIDs V1760, A=1720). Vision Asia Radio has been added (A=573) but is not yet in use. T13/12.563H, Sr 30.000, 2/3 has several changes. Service 6 (V=1660, A=1620) relabelled to 'Polsat' but only colour bar pattern as of 4 March (and back to 'Service 6' label). Another spare channel, Service 9, has become USA origin EWTN, a Catholic channel 24 x 7, appropriately labelled 'EWTN' (V=1960, A=1920). Of note, on same transponder Australia's AMTV also broadcasts some EWTN programming but the new EWTN obviously used a better grade of NTSC to PAL standards converter as the video quality is significantly better. 'ME Radio' is now gone from T13. On February 26, 'GC Adhoc (V=2260, A=2220) aired

The February 26th 'incident'

Thick cloud, heavy water laden layers floating over Sydney, from 9:30 to 11PM created major challenges for uplinkers serving B3 and C1. The uplink signals from Belrose (et al) were significantly degraded by the layers of water overhead, forcing technicians to wind up the transmitter power to compensate for additional uplink losses. Simultaneously, it appeared Optus by telemetry control of B3 and C1 actually spoke to the birds asking them to increase their receive side gain to help compensate for the lower signals flying upward from earth. Unfortunately the path loss increase was greater than either increased uplink power or telemetry controlled satellite receiver gain could fix. The result was simply noise over the full bandwidth of each of several affected transponders. Strangely, UBI's 5 B3 MCPCs stayed on the air suggesting strongly they no longer uplink from Sydney while T12/12.502H non-MPEG MCPC was affected. Once the rain layers reduced, Globecast came back up but with several C-band off air feed channels missing, suggesting either damage to C-band reception antennas or for lower look angle C-band reception, the storm was still not 'over'.

FTA 'Tropfest' (small film awards ceremony) from the Sydney Domain - the event closed early because of a major storm (see 'February 26th incident', here). 'Smile of a child' (V=2160, A=2120) is now correctly labelled (was 'Healing Channel'). Globecast continues to run FTA feeds for TVN on 12.553V and 12.336H (both Sr 6.669, 3/4); content is often Fox Sports A-League football (soccer). (IF, Qld.)

Optus C1/156E: "On 22 February, Optus removed a page (#7 of 11) from their 'Tune 156E' listing (see SF#138, p. 21), entitled "Optus Vision Smartcards." For the record here are the last known authorisation centre phone numbers: 1300-301-681, or directly to Belrose at +61-2-9452-3160 and a fax of +61-2-9342-3260." (Anthony) (Editor's note: If these numbers do not work, and you know one or more that do, drop us a line at [email] skyking@clear.net.nz.) "On February 13 T13/12.398H, Sr 27.800, 3/4 modified one of two 'Weather' channels to 'Weather Active'. The data PID on 'Active' runs at over 1 MBit/s which is far more than the other 'Weather' channel (0.008 and 0.032 MBit/s). On

WITH THE OBSERVERS: Reports of new programmers, changes in established programming sources are encouraged from readers throughout the Pacific and Asian regions. Information shared here is an important tool in our ever expanding satellite TV universe. **Photos of yourself, your equipment** or off-air photos taken from your TV screen **are welcomed**. TV screen photos: If PAL or SECAM, set camera to f3.5-f5 at 1/15th second with ASA 100 film; for NTSC, change shutter speed to 1/30th. Use no flash, set camera on tripod or hold steady. Alternately submit any VHS speed, format reception directly to SatFACTS and we will photograph for you. Deadline for April 15th issue: April 4th by mail or 5PM NZT April 5th if by fax to 64-9-406-1083 or Email

skyking@clear.net.nz.

WAVELENGTH

Communications Pte Ltd

TOPFIELD

TF4000Fi / FTA
TF5000CI / Common interface
TF3000CIPpro
TF3200IR
TF4000PVR / 40 Gb hard drive
TF5010PVR / 80 Gb hard drive

MTI LNBf

Single Universal Ku AP8-XT2
LO 11.3 Ku AP8-T2J
Prime focus Ku AP8-TWF

- 2/4GHz A/V sender
- Sat-Finder (SF-95)
- Angle Level Meter (A100, A300)
- Switches /DiSEqC 2x1, 4x1, 13/17V, 0/12V, 0/22 kHz
- Mesh Antennas (PSL, Dynasat) 2.1, 2.4, 3 and 3.7m
- Solid Antennas / 65, 75, 90, 120, 150, 280, 240cm
- Cables / RG-6, RG-11; 100m, 305m

No. 60 Kakit Bukit, Place #04-14, Eunostech Park,
Singapore 415979 Phone# +65-6846-3236,
Fax +65-6741-0626 Email sales@wavelength.com.sg
Website www.satellite.com.sg

February 23, T11/12.305H, Sr 30.000, 3/4 (Austar's interactive game channel) relabelled a game channel to 'ASTRA Awards Voting' loading 3 data PIDs with an EPG reading 'ASTRA Voting - coming soon: On March 29 vote in six key categories. Once you register to vote, you are eligible to win a flatscreen TV or a trip for two to the 2006 ASTRA Awards in Sydney'." (AI, NSW) "On March 1 several minor changes to Foxtel/Austar listings. The 30 radio channels all labelled as 'air' and now labelled 'AIR01' through 'AIR30' (T19/12.638H, Sr 27.800, 3/4). Fox FFC labels have been changed to 'Fox Footy'. The ESPN channel (T15/12.478H) is now labelled 'Spare' while ESPN has moved to T13/12.398H (V=1101, A=1102). Of note, T13 is where the special extra coverage of 'The Commonwealth Games' has been announced. On T14/12.438H, two new channels added 'ASTRA Awards' and 'ASTRA Awards Voting' but at press-time appear to be graphics only at 0.188MBit/s." (NS, Victoria)

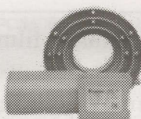
Soapbox: "Unexplained significant improvement in analogue reception from Sydney's 9 and 10 networks - areas west of Sydney where previously only ABC's band I signal was available off-air now receiving P3, even P4 reception with carefully placed 10-element yagi and masthead amp. On the digital side, no sign of below threshold 8 (network 9) although 11 (digital 10) and 12 (ABC digital) are present on analyser just below threshold. So what has changed here? Why where no signals before we suddenly have reception?" (DM, NSW) "Australian Trade Minister Mark Vaile is under pressure from his US counterpart, Robert Zoellick, concerning Australian laws applying to copying of copyright

SATWORLD

...the place to buy all of your favourite Strong products!



2.3M MESH DISH



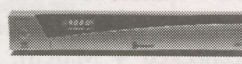
C BAND LNBf



POSITIONER



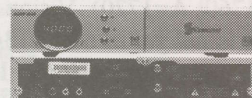
ACTUATOR



FTA RECEIVER



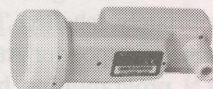
2 X CI CAM RECEIVER



X BOX/4650/4652



65CM & 85CM DISHES



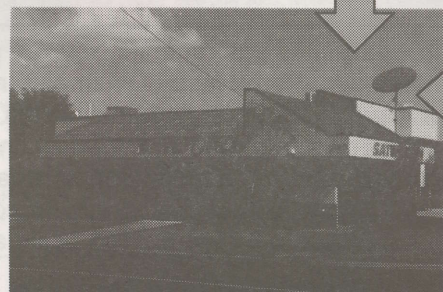
KU BAND LNB

CALL FOR THE
BEST TRADE PRICES
TOO HOT TO PRINT!

ALSO STOCKING:

DREAM
multimedia.TV™

PROMAX



SATWORLD

2/493 HAMMOND RD, DANDENONG STH, VIC
PHONE: (03) 9768 2920 FAX: (03) 9768 2921
EMAIL: sales@satworld.com.au
WEBSITE: www.satworld.com.au

Blast from the past: 1986 - Sultan of Malaysia Install

Ramon Samson (Coquitlam, British Colombia) reminds us of the 'good old days' when huge dishes for the world's very-wealthy folks were being installed world-wide. The front cover of CSD / Coop's Satellite Digest from November 1986 shows a 9.1m Continental (brand) mesh dish installed at Johore Bahru, Malaysia for Yang di Pertuan Agung. Samson writes, "I joined Asia Pacific Satellite Systems (Hong Kong), working for Tim Brewer who had a business selling dishes throughout Asia, in 1985." Brewer wrote to CSD late in 1986, "We currently sell as many as 200 systems a month, mostly 6/8 feet in size, accessing Thai and Malaysian programming through Palapa. A 16 footer is slightly below threshold for AFRTS (Editor's note: FTA, analogue, at that time) but a 30 footer (Continental 9.1m) produces elegant reception."

In the front cover photo here, the "King's system" was designed around a 1-watt amplifier that transferred the 950 - 1450 MHz L-band IF through an antenna link to the palace. The dish required azimuth and elevation remote control, done with a UHF radio link and yagi antennas, and a modified Houston Tracker V series system."

Samson, of a recent date, adds: "I wanted the photo to show not only the monster antenna (which I recall had a slight shake as a bowl of 'jelly' in a wind) but the palace of the Sultan as well (in the background here)." Brewer wrote in 1986, "His majesty's favourite channel is AFRTS." Two similar installations, using Continental 7.3m antennas, were installed for the Sultan of Brunei.

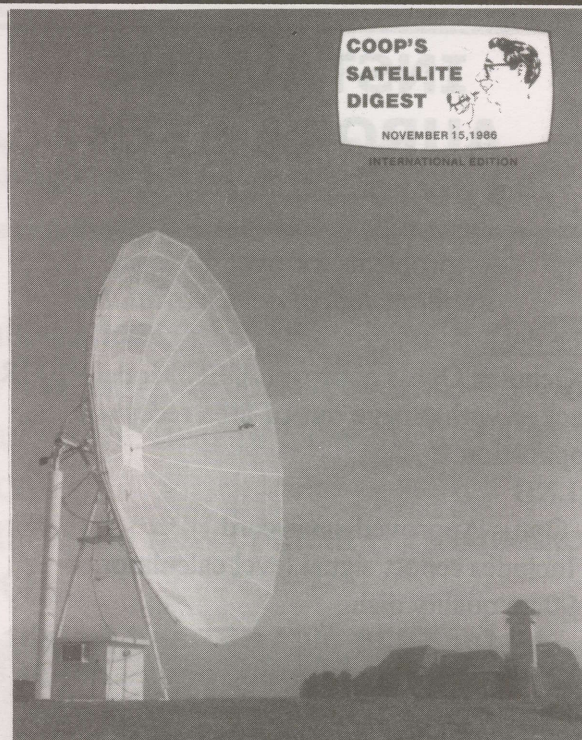
Samson recalls, "We used ICM 70 MHz input receivers, state of the art MTI LNA + BDC units. The first installation I worked on, for APSS, involved a 25 foot Continental mesh antenna, for the JVC plant in Surabaya, Indonesia. The engineers there wanted a system to learn as much as they could about the latest technology in this rapidly emerging field."

In 1986, AFRTS was approaching analogue scrambling largely in response to objections from Intelsat (V-F8 was the Pacific bird at that time) which wanted installations such as the Sultans and others of 16 foot and up class - including the 21-24 footers so popular in New Zealand motels, to be denied access to FTA service. Intelsat actually pressured individual countries to 'ban' dishes receiving their transmissions, using AFRTS as an example of how 'pirated American reception was being widely used throughout Asia.' In fact, few could afford the Sultan-class antennas required and at American bases, such as Clark AFB near Manila, there was a much cheaper answer. AFRTS downlinked to Clark, where the service was plugged into a UHF TV transmitter. In theory, the base TV covered the base only. In fact, as CSD reported in the mid-80s with photos, tens of thousands of non-base residences had to but install a simple UHF antenna and they had immediate access to the AFRTS American programming. Brewer noted, "AFRTS will be or already is encoding the satellite feed, while all around bases in Korea, the Philippines, throughout Europe residents are 'pirating' the American programming that is locally transmitted in the clear."

Samson adds, "By 1984, virtually everyone in telecommunications in the Pacific and Asia had heard, 'There are TV signals on the satellites' and will some skill, a bit of luck and a following wind, a person or firm could 'tap into' the treasure trove. I came out of a nine-year contract with Intelsat and others where we used 100 foot Cassegrain feed antennas (Intelsat Standard A class), one each for the POR (Pacific Ocean Region) and IOR (Indian Ocean Region) as we could access from our headquarters in Singapore."

"Eventually all of this came to a halt, the result of scrambling and before AsiaSat 1 was launched I ended up in the Vancouver region working for Norsat which legend says one Rod Wheeler pioneered."

Editor's note: Ramon Samson's boss at APSS, Tim Brewer, pioneered uplinking from various SE Asia locations including Subic Bay Satellite Systems, currently lives in Italy primarily 'retired' although still consulting for various receiver manufacturers and designers. Samson, in British Colombia, owns his own dealer/distribution business (Teleson Systems) for telecom hardware. This was a period of time never again to be repeated, the 'glory days' of 'first-satellite-TV' for virtually any location in the world. If this sort of 'past accomplishment' grabs you, see "Television's Pirates: Hiding behind your picture tube" which in 928 pages (page 32, here) tells the complete story of how television grew out of the test tube to envelope the entire world.



materials. Zoellick has expressed US concerns about Australia's laws dealing with encoded satellite signals - the US wants criminal sanctions, Australia has been reluctant to do so." (Tim H) "(www)YouTube and (www)MySpace are pushing the legal envelopes surrounding what video can be

placed on the web, and under what legal arrangements. Video on the net has been, until recently, far from a seamless experience, requiring users to first select a particular software 'media player' followed by downloading a bulky clip or program. Some have called YouTube a video version of the

INSTALLING AURORA KITS?

Buy your kits from the people who have
been solving television reception
problems for over 40 years;
useful technical advice available!

The deal

- Genuine Optus approved UEC Model 910 IRD packed with 4 page out-of-area reception application
- LNB
- Optus Approved smartcard
- Includes report signal level calculator
- 90cm quality dish

**All for \$428 plus GST and freight
(90cm dish shipped, enclosed, in a
strong cardboard box).**

Trade installers, only, from:

RURAL ELECTRONIC PRODUCTS

"The Better Reception Centre"

315 Summer Street Orange NSW 2800

Phone (02) 6361 3636

once high flying Napster audio download - exchange service but YouTube management is adamant they wish to work with, not against or below, the video content owners. It is all happening very fast - literally at the speed of light!" (Ronald T, California) "The great rush to create video clips to PCs and cell fones is now truly in fast gear. Sprint customers for \$5.95 per month can now access MTV, VH1, CMT and Comedy Central. CBS News for \$0.99 (US) a month will send subscribers 5 'Mobile News Alerts' daily." (Andrew B, Illinois) "UK's digital terrestrial service, Freeview, has now passed 10 million boxes in consumer hands - by comparison BSkyB has 8 million, cable 3 million subscribers. Current monthly sales are topping 100,000 and growing 25%-plus when compared to prior year, same month." (Roger) "TVNZ (NZ) has appointed an ex-TV3 programmer, Juliet Etherington, as Programming Manager for new Digital Services Unit." (CS, NZ) "Oddity: UK's Freeview boxes have a serious design defect with an internal reference oscillator capable of radiating signals on 121.5 and/or 243 MHz. Unfortunately, these two frequencies (plus 406.0 MHz) are the international Cospas-Sarat satellite distress signal frequencies. There have been as many as ten incidents in past 60 days where a Freeview box has triggered false 'search' signals causing manpower and equipment to 'roll' in search of a boat or aeroplane in distress. The solution will be to abandon 121.5 and 243 in favour of only 406 MHz., scheduled for 2009. The 406 service will require new (digitally encoded) emergency transmitters (all on 121.5 and 243 will have to be replaced) which they believe will eliminate the false-alarms. The 121.5/243 services are simplistic analogue from an era now long gone." (Freddie, UK)

SATELLITE TV IS A GREAT HOBBY - Let's not forget that!

Since 1976 we've been involved in satellite TV. A hobby in those early days, our interest led to establishment of a business in 1981 that has introduced thousands of people to the exciting world of satellite TV. We produced our first international satellite receiver kit in 1986, and the first DIY home satellite system in Australia back in the early days of 1990.

Along the way we have found that above all else, customer support is critical. If you look around the industry, you'll soon sort out those vendors who operate on a strictly commercial basis, and, those who really have your real hobby interests at heart.

That's why we have made it our priority to give you all of the information to help you make your hobby a success. So if you are contemplating Satellite TV as a hobby, give us a call; we'll help get you off on the best track. Who knows - you might even become a part of this growing industry!! You can count on our decades of experience to provide you with the best "right" solution at an affordable price.

AV-COMM Pty Ltd

P.O. Box 225 Brookvale NSW 2100 AUSTRALIA

Tel 61-2-9939 4377 Fax 61-2-9939 4376 or, visit our website at

<http://www.avcomm.com.au>

Email cgarry@avcomm.com.au

You are welcome to also visit our showroom (24/9 Powell's Rd, Brookvale NSW),
join our E-mail newsletter service (addme@avcomm.com.au)

(Av-Comm Pty Ltd ACN 004 174 478)

EFFECTIVE APRIL 10:

www.bobcooper.tv

The ultimate "Coop" website:

- ✓ The latest publications
- ✓ Fascinating trips into the past - History in near-real-time
- ✓ Video reports - Exciting "You are there" in the best of Edward R. Murrow tradition
- ✓ Updated on the first of each month with brand new content (next update 1 June 2006)

**NOT a replacement for www.apsattv.com -
a parallel site for the REAL enthusiasts!**

THINK of www.bobcooper.tv as a web-site MONTHLY
updated electronic publication - connecting the past
with the present, brand new each month.

In Volume 1 / Number 1 available April 10, 2006

- The REAL roots of TVRO - page 1
- "Who's on first?" - listing of those appearing in "Television Pirates" - page 2
 - In perspective: "Before TVRO: How it all began" - page 6 (links)
 - In perspective: "First home TVRO efforts" - page 6 (links)
- Classic Video: "First Small-Dish Intelsat Reception" - page 6 (links)
 - CATJ-CSD Anthology on DVD - page 7
- "Television's Pirates: Hiding behind your picture tube" - page 8
 - Relevant site links - page 9

**Check between April 10 and May 31 for Volume 1 / Number 1;
June 1 or after for Volume 1 / Number 2 (content changes
monthly on first of the month - beginning June 1, 2006).**

To order

"TELEVISION'S PIRATES: Hiding behind your picture tube"
928 pages, leaving no piracy-bandanna unturned.

turn page over

WHAT they are saying about TELEVISION'S PIRATES

"One of the chief proponents - indeed pioneers - of home TVRO was an energetic journalist/electronics buff named Robert Cooper, who began publishing a monthly magazine in 1979 full of gossip, technical news, and advertisements. Coop's Satellite Digest (CSD) was essential reading for anyone in the field, and in its the brief but hectic lifetime it chronicled the rise and fall of a multi-billion dollar industry."

Sir Arthur C. Clarke, Chapter 33, "How The World Was One"

"Virtually everyone in the 'real' TV world has a favorite 'Coop story' or anecdote. From my advance copy of "Television's Pirates: Hiding behind your picture tube" I am confident there will now be thousands more. I was there for at least the satellite portion of this - a participant, even a 'pirate' by Coop's definition (I wear my eye patch and bandanna proudly!). I was also palsy with top execs at HBO and Showtime in this era, people who saw Coop either as a 'white knight' (one day) or the 'black curse' (the next day). But they never underestimated his unpredictable nature to swoop in from a totally new direction sending their apple cart into total disarray."

Peter Sutro, formerly Patmar Technologies, Nantucket, Mass.

Thousands have already ordered!
Second printing now in advanced planning.

Release dates:

April 20, 2006 Satellite Expo Atlanta Georgia, ebay (Television's Pirates; jramsey1@rochester.rr.com)

May 1 2006 for mail orders (also try www.dmsiusa.com/cooper for **EARLY** delivery; USA)

May 19-20-21, 2006 at Dayton (Ohio) Hamfest (available at M-Squared Booth; myrna@m2inc.com)

Ship to:

Name _____ Company _____

Mailing Address _____

Town/city _____ Province/state _____ Country _____

☐ Send me "Television's Pirates: Hiding behind your picture tube" (928 pages!) and charge me US\$29.95/NZ\$44/Au\$40 as below - shipping charges added to book charge.

☐ SUBSCRIBE me to SatFACTS Monthly starting April 2006 issue #140: US\$75/NZ\$70/Au\$96

Charge to:

☐ VISA card ☐ Mastercard _____ - _____ - _____ Exp ____/____

Name as appears on card _____

☐ Cheque (to Far North Cable TV Ltd.) enclosed (see amount, above; *shipping included*)

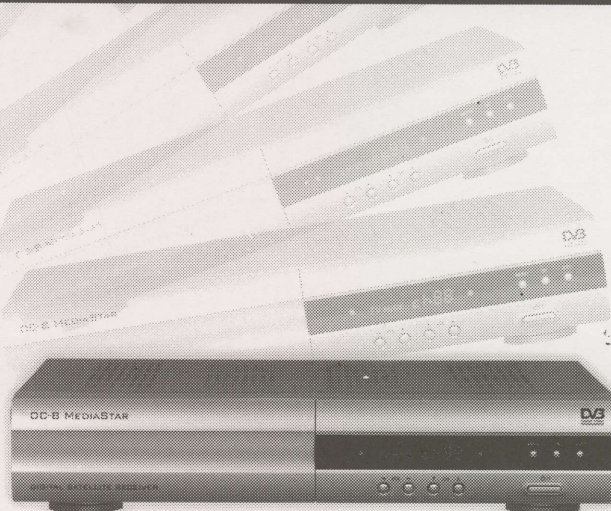
Placing order:

Fax this page to ++64 9 406 1083, Email to skyking@clear.net.nz or mail to Far North Cable TV Ltd, PO Box 30, Mangonui, Far North, New Zealand

THE DC-8 HAS LANDED



- 2 Slot common interface for Irdeto, Seca, Viaccess
- Symbol rate 2-45 MBPS
- Digital Audio AC-3 support by SPDIF
- S-Video output
- Close Caption subtitle and Teletex
- DiSEqC 1.0 and 1.2
- NTSC-PAL auto converting
- DSR to DSR copy



MediaStar
Communications
International
24 Bosci Road
Ingleburn NSW
2565 Australia

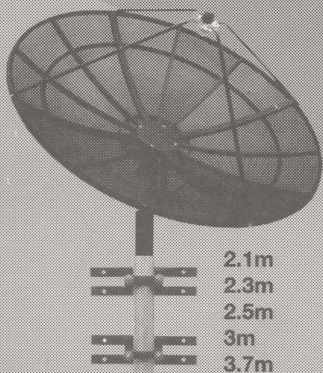
Tel: 02 9618 5777

Fax: 02 9618 5077

www.mediastar.com.au

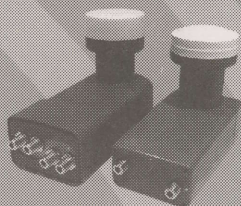


MediaStar
High Performance

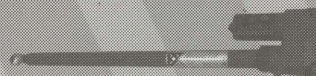


Heavy Duty Frame
Stronger Mesh

2.1m
2.3m
2.5m
3m
3.7m



11300 MHz L/O
Dual and Quad Output



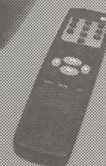
Mustang Actuators
18", 24", 36", 56"



Aston Cams



EZ2000+
Positioner



Making communications shine. MediaStar

www.sciteq.com.au
sales@sciteq.com.au

Ph: +61 8 9409 6677
Fax: +61 8 9309 5210

SCITEQ

Pty Ltd ABN 34 009 235 090

HUMAX

Humax F2-1002 FTA Digital Satellite Receiver



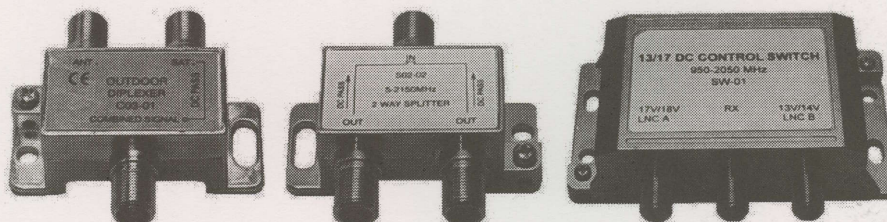
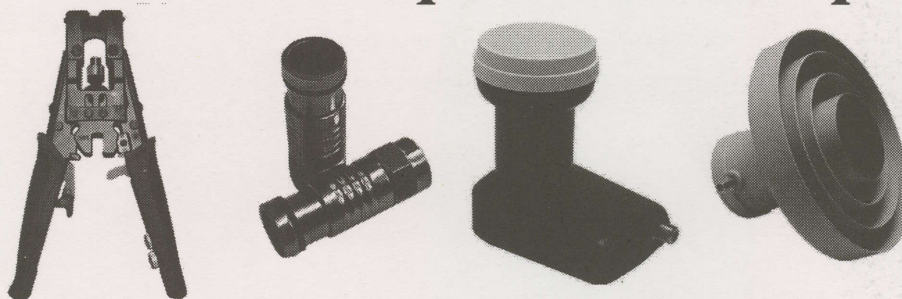
Stock No.
101010

Free to Air, Compact Design, Super Signal Finder, High Sensitive Tuner and USALS Capable at an Affordable Price

Order online at www.sciteq.com.au

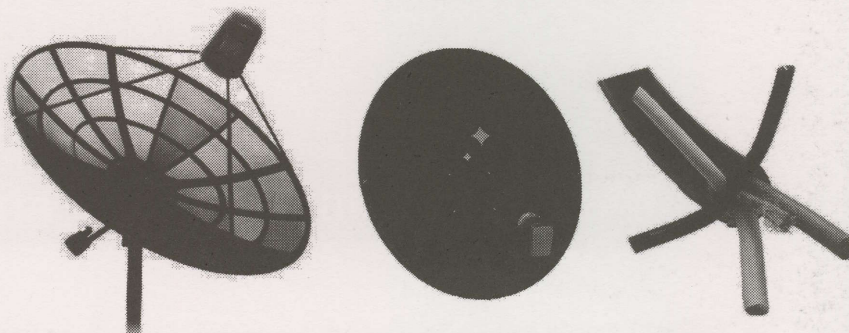
- Sat. Receivers
- Dishes C & KU
- LNBFs
- Mounts
- Connectors
- Cable Tools
- Switches
- Splitters
- Cable
- Alignment Tools
- Acutators
- Positioners
- Feedhorns
- Line Amps
- CI Modules
- Smartcards

Your one stop Satellite Shop



As well as our
Terrestiral Range

- Plasmas
- LCDs
- Set Top Boxes
- HDs
- PVRs
- RCUs
- AV Cables
- CCTV Cameras



*everything mentioned here we have **IN STOCK***